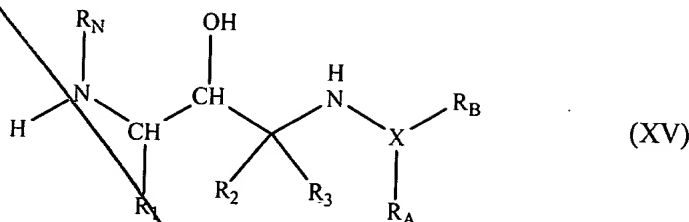


WE CLAIM:

1. A substituted amine of formula (XV)



where R₁ is:

- (I) C₁-C₆ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, C₁-C₇ alkyl (optionally substituted with C₁-C₃ alkyl and C₁-C₃ alkoxy), -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl, and -OC=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,
- (II) -CH₂-S(O)₀₋₂-(C₁-C₆ alkyl),
- (III) -CH₂-CH₂-S(O)₀₋₂-(C₁-C₆ alkyl),
- (IV) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,
- (V) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,
- (VI) -(CH₂)_{n1}-(R_{1-aryl}) where n₁ is zero or one and where R_{1-aryl} is phenyl, 1-naphthyl, 2-naphthyl and indanyl, indenyl, dihydronaphthalyl, or tetralinyl optionally substituted with one, two, three or four of the following substituents on the aryl ring:
- (A) C₁-C₆ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, and C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,
- (B) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(C) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

5 (D) -F, Cl, -Br or -I,

(F) -C₁-C₆ alkoxy optionally substituted with one, two or three of -F,

(G) -NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are as defined below,

(H) -OH,

10 (I) -C≡N,

(J) C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(K) -CO-(C₁-C₄ alkyl),

15 (L) -SO₂-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(M) -CO-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, or

(N) -SO₂-(C₁-C₄ alkyl),

(VII) -(CH₂)_{n₁}-(R_{1-heteroaryl}) where n₁ is as defined above and where R_{1-heteroaryl} is selected from the group consisting of:

20 pyridinyl,

pyrimidinyl,

quinolinyl,

benzothienyl,

indolyl,

25 indolinyl,

pyridazinyl,

pyrazinyl,

isoquinolyl,

quinazolinyl,

30 quinoxalinyl,

phthalazinyl,

imidazolyl,

isoxazolyl,

5

pyrazolyl,
oxazolyl,
thiazolyl,
indolizinyll,
indazolyl,
benzothiazolyl,
benzimidazolyl,
benzofuranyl,

10

furanyl,
thienyl,
pyrrolyl,
oxadiazolyl,
thiadiazolyl,

15

triazolyl,
tetrazolyl,
oxazolopyridinyl,
imidazopyridinyl,
isothiazolyl,

20

naphthyridinyl,
cinnolinyll,
carbazolyl,
beta-carbolinyll,

25

isochromanyl,
chromanyl,
tetrahydroisoquinolinyll,
isoindolinyll,
isobenzotetrahydrofuranyl,
isobenzotetrahydrothienyl,
isobenzothieryl,

30

benzoxazolyl,
pyridopyridinyl,
benzotetrahydrofuranyl,
benzotetrahydrothienyl,
purinyl,

5

benzodioxolyl,

triazinyl,

phenoxazinyl,

phenothiazinyl,

pteridinyl,

benzothiazolyl,

imidazopyridinyl,

imidazothiazolyl,

10

dihydrobenzisoxazinyl,

benzisoxazinyl,

benzoxazinyl,

dihydrobenzisoethiazinyl,

benzopyranlyl,

benzothiopyranlyl,

15

coumarinyl,

isocoumarinyl,

chromonyl,

chromanonyl,

pyridinyl-N-oxide,

20

tetrahydroquinolinyl

dihydroquinolinyl

dihydroquinolinonyl

dihydroisoquinolinonyl

dihydrocoumarinyl

25

dihydroisocoumarinyl

isoindolinonyl

benzodioxanyl

benzoxazolinonyl

pyrrolyl N-oxide,

30

pyrimidinyl N-oxide,

pyridazinyl N-oxide,

pyrazinyl N-oxide,

quinolinyl N-oxide,

indolyl N-oxide,

indoliny N-oxide,
 isoquinolyl N-oxide,
 quinazolinyl N-oxide,
 quinoxaliny N-oxide,
 5 phthalazinyl N-oxide,
 imidazolyl N-oxide,
 isoxazolyl N-oxide,
 oxazolyl N-oxide,
 thiazolyl N-oxide,
 10 indoliziny N-oxide,
 indazolyl N-oxide,
 benzothiazolyl N-oxide,
 benzimidazolyl N-oxide,
 pyrrolyl N-oxide,
 15 oxadiazolyl N-oxide,
 thiadiazolyl N-oxide,
 triazolyl N-oxide,
 tetrazolyl N-oxide,
 benzothiopyranyl S-oxide, and
 20 benzothiopyranyl S,S-dioxide,

where the $R_{1\text{-heteroaryl}}$ group is bonded to $-(CH_2)_{n1}-$ by any ring atom of the parent $R_{1\text{-heteroaryl}}$ group substituted by hydrogen such that the new bond to the $R_{1\text{-heteroaryl}}$ group replaces the hydrogen atom and its bond, where heteroaryl is optionally substituted with one, two, three or four of:

25 (1) C_1-C_6 alkyl optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C \equiv N, -CF $_3$, C_1-C_3 alkoxy, and -NR $_{1-a}$ R $_{1-b}$ where R $_{1-a}$ and R $_{1-b}$ are as defined above,

(2) C_2-C_6 alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -
 30 Cl, -OH, -SH, -C \equiv N, -CF $_3$, C_1-C_3 alkoxy, and -NR $_{1-a}$ R $_{1-b}$ where R $_{1-a}$ and R $_{1-b}$ are -H or C_1-C_6 alkyl,

(3) C_2-C_6 alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -

Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

- (4) -F, Cl, -Br or -I,
- (6) -C₁-C₆ alkoxy optionally substituted with one, two, or three of -F,
- (7) -NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are as defined below,
- (8) -OH,
- (9) -C≡N,
- (10) C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,
- (11) -CO-(C₁-C₄ alkyl),
- (12) -SO₂-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,
- (13) -CO-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, or
- (14) -SO₂-(C₁-C₄ alkyl), with the proviso that when n₁ is zero R_{1-heteroaryl} is not bonded to the carbon chain by nitrogen; or
- (VIII) -(CH₂)_{n1}-(R_{1-heterocycle}) where n₁ is as defined above and R_{1-heterocycle} is selected from the group consisting of:
- morpholinyl,
- thiomorpholinyl,
- thiomorpholinyl S-oxide,
- thiomorpholinyl S,S-dioxide,
- piperazinyl,
- homopiperazinyl,
- pyrrolidinyl,
- pyrrolinyl,
- tetrahydropyranyl,
- piperidinyl,
- tetrahydrofuranyl,
- tetrahydrothienyl,
- homopiperidinyl,

homomorpholinyl,
 homothiomorpholinyl,
 homothiomorpholinyl S,S-dioxide,
 oxazolidinonyl,
 dihydropyrazolyl,
 dihydropyrrolyl,
 dihydropyrazinyl,
 dihydropyridinyl,
 dihydropyrimidinyl,
 dihydrofuryl,
 dihydropyranyl,
 tetrahydrothienyl S-oxide,
 tetrahydrothienyl S,S-dioxide, and
 homothiomorpholinyl S-oxide,

where the $R_{1\text{-heterocycle}}$ group is bonded by any atom of the parent $R_{1\text{-heterocycle}}$ group substituted by hydrogen such that the new bond to the $R_{1\text{-heterocycle}}$ group replaces the hydrogen atom and its bond, where heterocycle is optionally substituted with one, two, three or four:

(1) $C_1\text{-}C_6$ alkyl optionally substituted with one, two or three substituents selected from the group consisting of $C_1\text{-}C_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C \equiv N, -CF₃, $C_1\text{-}C_3$ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(2) $C_2\text{-}C_6$ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C \equiv N, -CF₃, $C_1\text{-}C_3$ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or $C_1\text{-}C_6$ alkyl,

(3) $C_2\text{-}C_6$ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C \equiv N, -CF₃, $C_1\text{-}C_3$ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or $C_1\text{-}C_6$ alkyl,

(4) -F, Cl, -Br or -I,

(5) $C_1\text{-}C_6$ alkoxy,

(6) - $C_1\text{-}C_6$ alkoxy optionally substituted with one, two, or three -F,

- (7) $-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are as defined below,
 (8) $-OH$,
 (9) $-C\equiv N$,
 (10) C_3-C_7 cycloalkyl, optionally substituted with one, two
 5 or three substituents selected from the group consisting of $-F$, $-Cl$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$,
 C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are $-H$ or C_1-C_6 alkyl,

(11) $-CO-(C_1-C_4 \text{ alkyl})$,

(12) $-SO_2-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined

above,

10 (13) $-CO-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined

above,

(14) $-SO_2-(C_1-C_4 \text{ alkyl})$, or

(15) $=O$, with the proviso that when n_1 is zero $R_{1-\text{heterocycle}}$ is
 not bonded to the carbon chain by nitrogen,

15

where R_2 is:

(I) $-H$,

(II) C_1-C_6 alkyl, optionally substituted with one, two or three substituents
 selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$,

20 $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(III) $-(CH_2)_{0-4}-R_{2-1}$ where R_{2-1} is $R_{1-\text{aryl}}$ or $R_{1-\text{heteroaryl}}$ where $R_{1-\text{aryl}}$ and $R_{1-\text{heteroaryl}}$
 are as defined above;

(IV) C_2-C_6 alkenyl with one or two double bonds, optionally substituted
 with one, two or three substituents selected from the group consisting of $-F$, $-Cl$, $-OH$, $-$

25 SH , $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are $-H$ or C_1-C_6 alkyl,

(V) C_2-C_6 alkynyl with one or two triple bonds, optionally substituted with
 one, two or three substituents selected from the group consisting of $-F$, $-Cl$, $-OH$, $-SH$, $-$
 $C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are $-H$ or C_1-C_6 alkyl, or

(VI) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl, optionally substituted with one, two or
 30 three substituents selected from the group consisting of $-F$, $-Cl$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$,
 C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are $-H$ or C_1-C_6 alkyl;

where R_3 is:

(I)-H,

(II) C₁-C₆ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

5 (III) -(CH₂)₀₋₄-R₂₋₁ where R₂₋₁ is R_{1-aryl} or R_{1-heteroaryl} where R_{1-aryl} and R_{1-heteroaryl} are as defined above

(IV) C₂-C₆ alkenyl with one or two double bonds,

(V) C₂-C₆ alkynyl with one or two triple bonds; or

10 (VI) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

and where R₂ and R₃ are taken together with the carbon to which they are attached to form a carbocycle of three, four, five, six, or seven carbon atoms, optionally where one carbon atom is replaced by a heteroatom selected from the group consisting of
15 -O-, -S-, -SO₂-, and -NR_{N-2}-, where R_{N-2} is selected from the group consisting of:

(a) -H,

(b) -C₁-C₆ alkyl optionally substituted with one substituent selected from the group consisting of:

(i) -OH, and

20 (ii) -NH₂,

(c) -C₁-C₆ alkyl optionally substituted with one, two, or three -F, -Cl, -Br, or -I,

(d) -C₃-C₇ cycloalkyl,

(e) -(C₁-C₂ alkyl)-(C₃-C₇ cycloalkyl),

25 (f) -(C₁-C₆ alkyl)-O-(C₁-C₃ alkyl),

(g) -C₂-C₆ alkenyl with one or two double bonds,

(h) -C₂-C₆ alkynyl with one or two triple bonds,

(i) -C₁-C₆ alkyl chain with one double bond and one triple bond,

30 (j) -R_{1-aryl} where R_{1-aryl} is as defined above, and

(k) -R_{1-heteroaryl} where R_{1-heteroaryl} is as defined above;

where R_N is:

(I) $R_{N-1}-X_N$ where X_N is selected from the group consisting of:

(A) $-\text{CO}-$,

(B) $-\text{SO}_2-$,

(C) $-(\text{CR}'\text{R}'')_{1-6}$ where R' and R'' are the same or different and are

5 $-\text{H}$ and $\text{C}_1\text{-C}_4$ alkyl,

(D) $-\text{CO}-(\text{CR}'\text{R}'')_{1-6}-X_{N-1}$ where X_{N-1} is selected from the group consisting of $-\text{O}-$, $-\text{S}-$ and $-\text{NR}'-$ and where R' and R'' are as defined above, and

(E) a single bond;

where R_{N-1} is selected from the group consisting of:

10 (A) $R_{N\text{-aryl}}$ where $R_{N\text{-aryl}}$ is phenyl, 1-naphthyl, 2-naphthyl, tetralinyl, indanyl, 6,7,8,9-tetrahydro-5H-benzo[a]cycloheptenyl, or dihydronaphthyl optionally substituted with one, two or three of the following substituents which can be the same or different and are:

(1) $\text{C}_1\text{-C}_6$ alkyl, optionally substituted with one, two or
15 three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, $\text{C}_1\text{-C}_3$ alkoxy, and $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(2) $-\text{OH}$,

(3) $-\text{NO}_2$,

20 (4) $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$,

(5) $-\text{CO}-\text{OH}$,

(6) $-\text{C}\equiv\text{N}$,

(7) $-(\text{CH}_2)_{0-4}-\text{CO}-\text{NR}_{N-2}\text{R}_{N-3}$ where R_{N-2} and R_{N-3} are the
same or different and are selected from the group consisting of:

25 (a) $-\text{H}$,

(b) $-\text{C}_1\text{-C}_6$ alkyl optionally substituted with one
substituent selected from the group consisting of:

(i) $-\text{OH}$, and

(ii) $-\text{NH}_2$

30 (c) $-\text{C}_1\text{-C}_6$ alkyl optionally substituted with one,
two, or three $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, or $-\text{I}$,

(d) $-\text{C}_3\text{-C}_7$ cycloalkyl,

(e) $-(\text{C}_1\text{-C}_2 \text{ alkyl})-(\text{C}_3\text{-C}_7 \text{ cycloalkyl})$,

- (f) $-(C_1-C_6 \text{ alkyl})-O-(C_1-C_3 \text{ alkyl})$,
 (g) $-C_2-C_6 \text{ alkenyl}$ with one or two double bonds,
 (h) $-C_2-C_6 \text{ alkynyl}$ with one or two triple bonds,
 (i) $-C_1-C_6 \text{ alkyl chain}$ with one double bond and one
 5 triple bond,
 (j) $-R_{1-aryl}$ where R_{1-aryl} is as defined above, and
 (k) $-R_{1-heteroaryl}$ where $R_{1-heteroaryl}$ is as defined above,
 (8) $-(CH_2)_{0-4}-CO-(C_1-C_{12} \text{ alkyl})$,
 (9) $-(CH_2)_{0-4}-CO-(C_2-C_{12} \text{ alkenyl}$ with one, two or three
 10 double bonds),
 (10) $-(CH_2)_{0-4}-CO-(C_2-C_{12} \text{ alkynyl}$ with one, two or three
 triple bonds),
 (11) $-(CH_2)_{0-4}-CO-(C_3-C_7 \text{ cycloalkyl})$,
 (12) $-(CH_2)_{0-4}-CO-R_{1-aryl}$ where R_{1-aryl} is as defined above,
 15 (13) $-(CH_2)_{0-4}-CO-R_{1-heteroaryl}$ where $R_{1-heteroaryl}$ is as defined
 above,
 (14) $-(CH_2)_{0-4}-CO-R_{1-heterocycle}$ where $R_{1-heterocycle}$ is as
 defined above,
 (15) $-(CH_2)_{0-4}-CO-R_{N-4}$ where R_{N-4} is selected from the
 20 group consisting of morpholinyl, thiomorpholinyl, piperazinyl, piperidinyl,
 homomorpholinyl, homothiomorpholinyl, homothiomorpholinyl S-oxide,
 homothiomorpholinyl S,S-dioxide, pyrrolinyl and pyrrolidinyl where each group is
 optionally substituted with one, two, three, or four of $C_1-C_6 \text{ alkyl}$,
 (16) $-(CH_2)_{0-4}-CO-O-R_{N-5}$ where R_{N-5} is selected from the
 25 group consisting of:
 (a) $C_1-C_6 \text{ alkyl}$,
 (b) $-(CH_2)_{0-2}-(R_{1-aryl})$ where R_{1-aryl} is as defined
 above,
 (c) $C_2-C_6 \text{ alkenyl}$ containing one or two double
 30 bonds,
 (d) $C_2-C_6 \text{ alkynyl}$ containing one or two triple
 bonds,
 (e) $C_3-C_7 \text{ cycloalkyl}$, and

(f) $-(CH_2)_{0-2}-(R_{1-\text{heteroaryl}})$ where $R_{1-\text{heteroaryl}}$ is as

defined above,

(17) $-(CH_2)_{0-4}-SO_2-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are as

defined above,

5

(18) $-(CH_2)_{0-4}-SO-(C_1-C_8 \text{ alkyl})$,

(19) $-(CH_2)_{0-4}-SO_2-(C_1-C_{12} \text{ alkyl})$,

(20) $-(CH_2)_{0-4}-SO_2-(C_3-C_7 \text{ cycloalkyl})$,

(21) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-O-R_{N-5}$ where R_{N-5} can be

the same or different and is as defined above,

10

(22) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-N(R_{N-5})_2$, where R_{N-5} can

be the same or different and is as defined above,

(23) $-(CH_2)_{0-4}-N-CS-N(R_{N-5})_2$, where R_{N-5} can be the same

or different and is as defined above,

(24) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-R_{N-2}$ where R_{N-5} and R_{N-2}

15

can be the same or different and are as defined above,

(25) $-(CH_2)_{0-4}-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} can be the

same or different and are as defined above,

(26) $-(CH_2)_{0-4}-R_{N-4}$ where R_{N-4} is as defined above,

(27) $-(CH_2)_{0-4}-O-CO-(C_1-C_6 \text{ alkyl})$,

20

(28) $-(CH_2)_{0-4}-O-R(O)-(OR_{N-\text{aryl}-1})_2$ where $R_{N-\text{aryl}-1}$ is $-H$ or

$C_1-C_4 \text{ alkyl}$,

(29) $-(CH_2)_{0-4}-O-CO-N(R_{N-5})_2$ where R_{N-5} is as defined

above,

(30) $-(CH_2)_{0-4}-O-CS-N(R_{N-5})_2$ where R_{N-5} is as defined

25

above,

(31) $-(CH_2)_{0-4}-O-(R_{N-5})_2$ where R_{N-5} is as defined above,

(32) $-(CH_2)_{0-4}-O-(R_{N-5})_2-COOH$ where R_{N-5} is as defined

above,

(33) $-(CH_2)_{0-4}-S-(R_{N-5})_2$ where R_{N-5} is as defined above,

30

(34) $-(CH_2)_{0-4}-O-(C_1-C_6 \text{ alkyl})$ optionally substituted with

one, two, three, four, or five of $-F$),

(35) $C_3-C_7 \text{ cycloalkyl}$,

(36) C₂-C₆ alkenyl with one or two double bonds optionally substituted with C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(37) C₂-C₆ alkynyl with one or two triple bonds optionally substituted with C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(38) -(CH₂)₀₋₄-N(-H or R_{N-5})-SO₂-R_{N-2} where R_{N-5} and R_{N-2} can be the same or different and are as described above, or

(39) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl,

(B) -R_{N-heteroaryl} where R_{N-heteroaryl} is selected from the group consisting of:

pyridinyl,
pyrimidinyl,
quinolinyl,
benzothienyl,
indolyl,
indolinyl,
pyridazinyl,
pyrazinyl,
isoindolyl,
isoquinolyl,
quinazolinyl,
quinoxalinyl,
phthalazinyl,
imidazolyl,
isoxazolyl,
pyrazolyl,
oxazolyl,
thiazolyl,
indolizinyll,
indazolyl,
benzothiazolyl,
benzimidazolyl,

benzofuranyl,
furanyl,
thienyl,
pyrrolyl,
5 oxadiazolyl,
thiadiazolyl,
triazolyl,
tetrazolyl,
oxazolopyridinyl,
10 imidazopyridinyl,
isothiazolyl,
naphthyridinyl,
cinnolinyl,
carbazolyl,
15 beta-carbolinyl,
isochromanlyl,
chromanyl,
tetrahydroisoquinolinyl,
isoindolinyl,
20 isobenzotetrahydrofuranyl,
isobenzotetrahydrothienyl,
isobenzothienyl,
benzoxazolyl,
pyridopyridinyl,
25 benzotetrahydrofuranyl,
benzotetrahydrothienyl,
purinyl,
benzodioxolyl,
triazinyl,
30 phenoxazinyl,
phenothiazinyl,
pteridinyl,
benzothiazolyl,
imidazopyridinyl,

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imidazothiazolyl,
dihydrobenzisoxazinyl,
benzisoxazinyl,
benzoxazinyl,
5 dihydrobenzisothiazinyl,
benzopyranyl,
benzothiopyranyl,
coumarinyl,
isocoumarinyl,
10 chromonyl,
chromanonyl,
pyridinyl-N-oxide,
tetrahydroquinolinyl,
dihydroquinolinyl,
15 dihydroquinolinonyl,
dihydroisoquinolinonyl,
dihydrocoumarinyl,
dihydroisocoumarinyl,
isoindolinonyl,
20 benzodioxanyl,
benzoxazolinonyl,
pyrrolyl N-oxide,
pyrimidinyl N-oxide,
pyridazinyl N-oxide,
25 pyrazinyl N-oxide,
quinolinyl N-oxide,
indolyl N-oxide,
indolinyl N-oxide,
isoquinolyl N-oxide,
30 quinazolinyl N-oxide,
quinoxalinyl N-oxide,
phthalazinyl N-oxide,
imidazolyl N-oxide,
isoxazolyl N-oxide,

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oxazolyl N-oxide,
 thiazolyl N-oxide,
 indoliziny N-oxide,
 indazolyl N-oxide,
 benzothiazolyl N-oxide,
 benzimidazolyl N-oxide,
 pyrrolyl N-oxide,
 oxadiazolyl N-oxide,
 thiadiazolyl N-oxide,
 triazolyl N-oxide,
 tetrazolyl N-oxide,
 benzothiopyranyl S-oxide, and
 benzothiopyranyl S,S-dioxide

where the $R_{N\text{-heteroaryl}}$ group is bonded by any atom of the parent R_N -heteroaryl group substituted by hydrogen such that the new bond to the $R_{N\text{-heteroaryl}}$ group replaces the hydrogen atom and its bond, where heteroaryl is optionally substituted with one, two, three, or four of:

(1) C_1 - C_6 alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1 - C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C \equiv N, -CF₃, C_1 - C_3 alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(2) -OH,

(3) -NO₂,

(4) -F, -Cl, -Br, or -I,

(5) -CO-OH,

(6) -C \equiv N,

(7) -(CH₂)₀₋₄-CO-NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are the same or different and are selected from the group consisting of:

(a) -H,

(b) C_1 - C_6 alkyl optionally substituted with one substituent selected from the group consisting of:

(i) -OH, and

(ii) -NH₂,

- (c) $-C_1-C_6$ alkyl optionally substituted with one, two, or three $-F$, $-Cl$, $-Br$, $-I$,
- (d) $-C_3-C_7$ cycloalkyl,
- (e) $-(C_1-C_2 \text{ alkyl})-(C_3-C_7 \text{ cycloalkyl})$,
- (f) $-(C_1-C_6 \text{ alkyl})-O-(C_1-C_3 \text{ alkyl})$,
- (g) $-C_2-C_6$ alkenyl with one or two double bonds,
- (h) $-C_2-C_6$ alkynyl with one or two triple bonds,
- (i) $-C_1-C_6$ alkyl chain with one double bond and one triple bond,
- (j) $-R_{1-aryl}$ where R_{1-aryl} is as defined above,
- (k) $-R_{1-heteroaryl}$ where $R_{1-heteroaryl}$ is as defined above,
- (8) $-(CH_2)_{0-4}-CO-(C_1-C_{12} \text{ alkyl})$,
- (9) $-(CH_2)_{0-4}-CO-(C_2-C_{12} \text{ alkenyl with one, two or three double bonds})$,
- (10) $-(CH_2)_{0-4}-CO-(C_2-C_{12} \text{ alkynyl with one, two or three triple bonds})$,
- (11) $-(CH_2)_{0-4}-CO-(C_3-C_7 \text{ cycloalkyl})$,
- (12) $-(CH_2)_{0-4}-CO-R_{1-aryl}$ where R_{1-aryl} is as defined above,
- (13) $-(CH_2)_{0-4}-CO-R_{1-heteroaryl}$ where $R_{1-heteroaryl}$ is as defined above,
- (14) $-(CH_2)_{0-4}-CO-R_{1-heterocycle}$ where $R_{1-heterocycle}$ is as defined above,
- (15) $-(CH_2)_{0-4}-CO-R_{N-4}$ where R_{N-4} is selected from the group consisting of morpholinyl, thiomorpholinyl, piperazinyl, piperidinyl, homomorpholinyl, homothiomorpholinyl, homothiomorpholinyl S-oxide, homothiomorpholinyl S,S-dioxide, pyrrolinyl and pyrrolidinyl where each group is optionally substituted with one, two, three, or four of C_1-C_6 alkyl,
- (16) $-(CH_2)_{0-4}-CO-O-R_{N-5}$ where R_{N-5} is selected from the group consisting of:
- (a) C_1-C_6 alkyl,
- (b) $-(CH_2)_{0-2}-(R_{1-aryl})$ where R_{1-aryl} is as defined above,
- (c) C_2-C_6 alkenyl containing one or two double bonds,

(d) C₂-C₆ alkynyl containing one or two triple bonds,

(e) C₃-C₇ cycloalkyl, and

(f) -(CH₂)₀₋₂-(R_{1-heteroaryl}) where R_{1-heteroaryl} is as

5 defined above,

(17) -(CH₂)₀₋₄-SO₂-NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are as

defined above,

(18) -(CH₂)₀₋₄-SO-(C₁-C₈ alkyl),

(19) -(CH₂)₀₋₄-SO₂-(C₁-C₁₂ alkyl),

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(20) -(CH₂)₀₋₄-SO₂-(C₃-C₇ cycloalkyl),

(21) -(CH₂)₀₋₄-N(H or R_{N-5})-CO-O-R_{N-5} where R_{N-5} can be

the same or different and is as defined above,

(22) -(CH₂)₀₋₄-N(H or R_{N-5})-CO-N(R_{N-5})₂, where R_{N-5} can

be the same or different and is as defined above,

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(23) -(CH₂)₀₋₄-N-CS-N(R_{N-5})₂, where R_{N-5} can be the same

or different and is as defined above,

(24) -(CH₂)₀₋₄-N(-H or R_{N-5})-CO-R_{N-2} where R_{N-5} and R_{N-2}

can be the same or different and are as defined above,

(25) -(CH₂)₀₋₄-NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} can be the

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same or different and are as defined above,

(26) -(CH₂)₀₋₄-R_{N-4} where R_{N-4} is as defined above,

(27) -(CH₂)₀₋₄-O-CO-(C₁-C₆ alkyl),

(28) -(CH₂)₀₋₄-O-P(O)-(OR_{N-aryl-1})₂, where R_{N-aryl-1} is -H or

C₁-C₄ alkyl,

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(29) -(CH₂)₀₋₄-O-CO-N(R_{N-5})₂ where R_{N-5} is as defined

above,

(30) -(CH₂)₀₋₄-O-CS-N(R_{N-5})₂ where R_{N-5} is as defined

above,

(31) -(CH₂)₀₋₄-O-(R_{N-5})₂ where R_{N-5} is as defined above,

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(32) -(CH₂)₀₋₄-O-(R_{N-5})₂-COOH where R_{N-5} is as defined

above,

(33) -(CH₂)₀₋₄-S-(R_{N-5})₂ where R_{N-5} is as defined above,

(34) -(CH₂)₀₋₄-O-(C₁-C₆ alkyl optionally substituted with

one, two, three, four, or five of -F),

(35) C₃-C₇ cycloalkyl,

(36) C₂-C₆ alkenyl with one or two double bonds optionally substituted with C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(37) C₂-C₆ alkynyl with one or two triple bonds optionally substituted with C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(38) -(CH₂)₀₋₄-N(-H or R_{N-5})-SO₂-R_{N-2} where R_{N-5} and R_{N-2} can be the same or different and are as defined above, or

(39) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl,

(C) R_{N-aryl}-W-R_{N-aryl}, where R_{N-aryl} can be the same or different,

(D) R_{N-aryl}-W-R_{N-heteroaryl},

(E) R_{N-aryl}-W-R_{N-1-heterocycle}, wherein R_{N-1-heterocycle} is the same as R_{1-heterocycle}, and R_{1-heterocycle} is as defined above

(F) R_{N-heteroaryl}-W-R_{N-aryl},

(G) R_{N-heteroaryl}-W-R_{N-heteroaryl},

(H) R_{N-heteroaryl}-W-R_{N-1-heterocycle},

(I) R_{N-heterocycle}-W-R_{N-aryl}, wherein R_{N-heterocycle} is the same as R_{1-heterocycle}, and R_{1-heterocycle} is as defined above, and R_{N-aryl} is as defined above,

(J) R_{N-heterocycle}-W-R_{N-heteroaryl}, and

(K) R_{N-heterocycle}-W-R_{N-1-heterocycle}.

where W is

(1) -(CH₂)₀₋₄,

(2) -O-,

(3) -S(O)₀₋₂,

(4) -N(R_{N-5})- where R_{N-5} is as defined above, or

(5) -CO-;

(II) -CO-(C₁-C₁₀ alkyl) where alkyl is optionally substituted with one three substituents selected from the group consisting of:

(A) -OH,

(B) -C₁-C₆ alkoxy,

(C) -C₁-C₆ thioalkoxy,

(D) -CO-O-R_{N-8} where R_{N-8} is -H, C₁-C₆ alkyl or -phenyl,

(E) $-\text{CO}-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(F) $-\text{CO}-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(G) $-\text{SO}_2-(\text{C}_1-\text{C}_8 \text{ alkyl})$,

5 (H) $-\text{SO}_2-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(I) $-\text{NH}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

(J) $-\text{NH}-\text{CO}-\text{O}-\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is as defined above,

10 (K) $-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(L) $-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(M) $-\text{O}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

(N) $-\text{O}-\text{CO}-\text{NR}_{\text{N-8}}\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ are the same or different and are as defined above,

15 (O) $-\text{O}-(\text{C}_1-\text{C}_5 \text{ alkyl})-\text{COOH}$,

(P) $-\text{O}-(\text{C}_1-\text{C}_6 \text{ alkyl})$ optionally substituted with one, two, or three of -F, -Cl, -Br, or -I),

(Q) $-\text{NH}-\text{SO}_2-(\text{C}_1-\text{C}_6 \text{ alkyl})$, and

(R) -F, or -Cl,

20 (III) $-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})-\text{O}-(\text{C}_1-\text{C}_6 \text{ alkyl})$ where alkyl is optionally substituted with one, two, or three substituents selected from the group consisting of:

(A) -OH,

(B) $-\text{C}_1-\text{C}_6$ alkoxy,

(C) $-\text{C}_1-\text{C}_6$ thioalkoxy,

25 (D) $-\text{CO}-\text{O}-\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is -H, C_1-C_6 alkyl or -phenyl,

(E) $-\text{CO}-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(F) $-\text{CO}-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(G) $-\text{SO}_2-(\text{C}_1-\text{C}_8 \text{ alkyl})$,

30 (H) $-\text{SO}_2-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(I) $-\text{NH}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

(J) $-\text{NH}-\text{CO}-\text{O}-\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is as defined above,

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as defined above,

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-F, -Cl, -Br, or -I),

substituted with one, two, or three of substituents selected from the group consisting of:

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(A) -OH.

(B) -C₁-C₆ alkoxy,

(C) -C₁-C₆ thioalkoxy,

(D) $-\text{CO}-\text{O}-\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is as defined above,

(E) $-\text{CO}-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

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(F) -CO-R_{N-4} where R_{N-4} is as defined above,

(G) -SO₂-(C₁-C₈ alkyl),

(H) $-\text{SO}_2-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

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(I) -NH-CO-(C₁-C₆ alkyl),

(J) -NH-CO-O-R_{N-8} where R_{N-8} is as defined above,

(K) -NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are the same or different and are as defined above,

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as defined above,

(L) -R_{N-4} where R_{N-4} is as defined above,

(M) -O-CO-(C₁-C₆ alkyl),

(N) -O-CO-NR_{N-8}R_{N-8} where R_{N-8} are the same or different and are

(O) -O-(C₁-C₅ alkyl)-COOH,

(P) $-\text{O}-(\text{C}_1\text{-C}_6 \text{ alkyl optionally substituted with one, two, or three of } -\text{F}, -\text{Cl}, -\text{Br}, \text{ or } -\text{I}),$

(Q) $-\text{NH}-\text{SO}_2-(\text{C}_1\text{-C}_6 \text{ alkyl}),$ and

(R) $-\text{F},$ or $-\text{Cl},$

5 (V) $-\text{CO}-\text{CH}(-(\text{CH}_2)_{0-2}-\text{O}-\text{R}_{\text{N-10}})-(\text{CH}_2)_{0-2}-\text{R}_{\text{N-aryl}}/\text{R}_{\text{N-heteroaryl}}$ where $\text{R}_{\text{N-aryl}}$ and $\text{R}_{\text{N-heteroaryl}}$ are as defined above, where $\text{R}_{\text{N-10}}$ is selected from the group consisting of:

(A) $-\text{H},$

(B) $\text{C}_1\text{-C}_6 \text{ alkyl},$

(C) $\text{C}_3\text{-C}_7 \text{ cycloalkyl},$

10 (D) $\text{C}_2\text{-C}_6 \text{ alkenyl with one double bond},$

(E) $\text{C}_2\text{-C}_6 \text{ alkynyl with one triple bond},$

(F) $\text{R}_{1\text{-aryl}}$ where $\text{R}_{1\text{-aryl}}$ is as defined above, and

(G) $\text{R}_{\text{N-heteroaryl}}$ where $\text{R}_{\text{N-heteroaryl}}$ is as defined above, or

(VI) $-\text{CO}-(\text{C}_3\text{-C}_8 \text{ cycloalkyl})$ where alkyl is optionally substituted with one
15 or two substituents selected from the group consisting of:

(A) $-(\text{CH}_2)_{0-4}-\text{OH},$

(B) $-(\text{CH}_2)_{0-4}-\text{C}_1\text{-C}_6 \text{ alkoxy},$

(C) $-(\text{CH}_2)_{0-4}-\text{C}_1\text{-C}_6 \text{ thioalkoxy},$

(D) $-(\text{CH}_2)_{0-4}-\text{CO}-\text{O}-\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is $-\text{H}, \text{C}_1\text{-C}_6 \text{ alkyl}$ or phenyl,

20 (E) $-(\text{CH}_2)_{0-4}-\text{CO}-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(F) $-(\text{CH}_2)_{0-4}-\text{CO}-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(G) $-(\text{CH}_2)_{0-4}-\text{SO}_2-(\text{C}_1\text{-C}_8 \text{ alkyl}),$

(H) $-(\text{CH}_2)_{0-4}-\text{SO}_2-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or
25 different and are as defined above,

(I) $-(\text{CH}_2)_{0-4}-\text{NH}-\text{CO}-(\text{C}_1\text{-C}_6 \text{ alkyl}),$

(J) $-\text{NH}-\text{CO}-\text{O}-\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is as defined above,

(K) $-(\text{CH}_2)_{0-4}-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or
different and are as defined above,

30 (L) $-(\text{CH}_2)_{0-4}-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(M) $-\text{O}-\text{CO}-(\text{C}_1\text{-C}_6 \text{ alkyl}),$

(N) $-O-CO-NR_{N-8}R_{N-8}$ where R_{N-8} are the same or different and are as defined above,

(O) $-O-(C_1-C_5 \text{ alkyl})-COOH$,

(P) $-O-(C_1-C_6 \text{ alkyl optionally substituted with one, two, or three of } -F, -Cl, -Br, \text{ or } -I)$,

(Q) $-NH-SO_2-(C_1-C_6 \text{ alkyl})$, and

(R) $-F$, or $-Cl$;

where R_A is:

(I) $-C_1-C_{10}$ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above, $-OC=O NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above, $-S(=O)_{0-2} R_{1-a}$ where R_{1-a} is as defined above, $-NR_{1-a}C=O NR_{1-b}$ where R_{1-a} and R_{1-b} are as defined above, $-C=O NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above, and $-S(=O)_2 NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(II) $-(CH_2)_{0-3}-(C_3-C_8)$ cycloalkyl where cycloalkyl can be optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkCyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, $-CO-OH$, $-CO-O-(C_1-C_4 \text{ alkyl})$, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(III) $-(CR_{A-x}R_{A-y})_{0-4}-R_{A-aryl}$ where R_{A-x} and R_{A-y} are

(A) $-H$,

(B) C_1-C_4 alkyl optionally substituted with one or two $-OH$,

(C) C_1-C_4 alkoxy optionally substituted with one, two, or three of $-F$,

(D) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl,

(E) C_2-C_6 alkenyl containing one or two double bonds,

(F) C_2-C_6 alkynyl containing one or two triple bonds, or

(G) phenyl,

and where R_{A-x} and R_{A-y} are taken together with the carbon to which they are attached to form a carbocycle of three, four, five, six or seven carbon atoms, optionally where one carbon atom is replaced by a heteroatom selected from the group consisting of $-O-$, $-S-$, $-SO_2-$, and $-NR_{N-2}-$ and R_{A-aryl} is the same as R_{N-aryl} ,

(IV) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}}$ where $\text{R}_{\text{A-heteroaryl}}$ is the same as $\text{R}_{\text{N-heteroaryl}}$ and $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(V) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-aryl}}-\text{R}_{\text{A-aryl}}$ where $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

5 (VI) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-aryl}}-\text{R}_{\text{A-heteroaryl}}$ where $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(VII) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}}-\text{R}_{\text{A-aryl}}$ where $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

10 (VIII) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}}-\text{R}_{\text{A-heteroaryl}}$ where $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(IX) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-aryl}}-\text{R}_{\text{A-heterocycle}}$ where $\text{R}_{\text{A-heterocycle}}$ is defined as $\text{R}_{\text{I-heterocycle}}$, and where $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(X) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}}-\text{R}_{\text{A-heterocycle}}$ where $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

15 (XI) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}}-\text{R}_{\text{A-aryl}}$ where $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(XII) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}}-\text{R}_{\text{A-heteroaryl}}$ where $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

20 (XIII) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}}-\text{R}_{\text{A-heterocycle}}$ where $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(XIV) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}}$ where $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(XV) $[\text{C}(\text{R}_{\text{A-1}})(\text{R}_{\text{A-2}})]_{1-3}-\text{CO}-\text{N}-(\text{R}_{\text{A-1}})_2$ where $\text{R}_{\text{A-1}}$ and $\text{R}_{\text{A-2}}$ are the same or different and are selected from the group consisting of:

25 (A) -H,

(B) $-\text{C}_1-\text{C}_6$ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_6 alkoxy, -O-phenyl, and $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

30 (C) C_2-C_6 alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_6 alkoxy, -O-phenyl, and $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(D) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

5 (E) -(CH₂)₁₋₂-S(O)₀₋₂-(C₁-C₆ alkyl),

(F) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

10 (G) -(C₁-C₄ alkyl)-R_{A'-aryl} where R_{A'-aryl} is as defined for R_{1-aryl},

(H) -(C₁-C₄ alkyl)-R_{A-heteroaryl} where R_{A-heteroaryl} is as defined above,

(I) -(C₁-C₄ alkyl)-R_{A-heterocycle} where R_{A-heterocycle} is as defined above,

(J) -R_{A-heteroaryl} where R_{A-heteroaryl} is as defined above,

(K) -R_{A-heterocycle} where R_{A-heterocycle} is as defined above,

15 (M) -(CH₂)₁₋₄-R_{A-4}-(CH₂)₀₋₄-R_{A'-aryl} where R_{A-4} is -O-, -S- or -NR_{A-5}- where R_{A-5} is C₁-C₆ alkyl, and where R_{A'-aryl} is defined above,

(N) -(CH₂)₁₋₄-R_{A-4}-(CH₂)₀₋₄-R_{A-heteroaryl} where R_{A-4} and R_{A-heteroaryl} are as defined above, and

(O) -R_{A'-aryl} where R_{A'-aryl} is as defined above,

20 and where R_{A-3} is the same or different and is:

(A) -H,

(B) -C₁-C₆ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined
25 above,

(C) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

30 (D) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(E) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

5 (F) $-R_{A'-aryl}$ where $R_{A'-aryl}$ is as defined above,

(G) $-R_{A-heteroaryl}$ where $R_{A-heteroaryl}$ is as defined above,

(H) $-R_{A-heterocycle}$ where $R_{A-heterocycle}$ is as defined above,

(I) $-(C_1-C_4 \text{ alkyl})-R_{A'-aryl}$ where $R_{A'-aryl}$ is as defined above,

(J) $-(C_1-C_4 \text{ alkyl})-R_{A-heteroaryl}$ where $R_{A-heteroaryl}$ is as defined above,

10 (K) $-(C_1-C_4 \text{ alkyl})-R_{A-heterocycle}$ where $R_{A-heterocycle}$ is as defined above, or

(XVI) $-CH(R_{A-aryl})_2$ where R_{A-aryl} are the same or different and are as defined above,

(XVII) $-CH(R_{A-heteroaryl})_2$ where $R_{A-heteroaryl}$ are the same or different and are as defined above,

(XVIII) $-CH(R_{A-aryl})(R_{A-heteroaryl})$ where R_{A-aryl} and $R_{A-heteroaryl}$ are as defined above,

(XIX) $-cyclopentyl$, $-cyclohexyl$, or $-cycloheptyl$ ring fused to R_{A-aryl} , $R_{A-heteroaryl}$, $R_{A-heterocycle}$ where R_{A-aryl} or $R_{A-heteroaryl}$ or $R_{A-heterocycle}$ are as defined above where one carbon of cyclopentyl, cyclohexyl, or $-cycloheptyl$ is optionally replaced with NH , NR_{N-5} , O , or $S(=O)_{0-2}$, and where cyclopentyl, cyclohexyl, or $-cycloheptyl$ can be optionally substituted with one or two $-C_1-C_3$ alkyl, $-F$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $=O$, or $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(XX) C_2-C_{10} alkenyl containing one or two double bonds optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(XXI) C_2-C_{10} alkynyl containing one or two triple bonds optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(XXI) $-(CH_2)_{0-1}-CHR_{A-6}-(CH_2)_{0-1}-R_{A-aryl}$ where R_{A-aryl} is as defined above and R_{A-6} is $-(CH_2)_{0-6}-OH$,

(XXII) $-(CH_2)_{0-1}-CHR_{A-6}-(CH_2)_{0-1}-R_{A-heteroaryl}$ where $R_{A-heteroaryl}$ and R_{A-6} is as defined above,

(XXIII) $-CH(-R_{A-aryl} \text{ or } R_{A-heteroaryl})-CO-O(C_1-C_4 \text{ alkyl})$ where R_{A-aryl} and $R_{A-heteroaryl}$ are as defined above,

5 (XXIV) $-CH(-CH_2-OH)-CH(-OH)-micro-NO_2$,

(XXV) $(C_1-C_6 \text{ alkyl})-O-(C_1-C_6 \text{ alkyl})-OH$,

(XXVII) $-CH_2-NH-CH_2-CH(-O-CH_2-CH_3)_2$,

(XXVIII) $-H$,

10 (XXIX) $-(CH_2)_{0-6}-C(=NR_{1-a})(NR_{1-a}R_{1-b})$ where R_{1-a} and R_{1-b} are as defined above; or

(XXX)

$-C=OC(HR_6)NHR_7$, where R_6 and R_7 are as defined below,

$-C=OR_7$, where R_7 is as defined below,

15 $-C=OOR_7$, where R_7 is as defined below, or

$-SOOR_7$ where R_7 is as defined below,

wherein R_6 is:

hydrogen,

$C_1 - C_3$ alkyl,

phenyl,

20 thioalkoxyalkyl,

alkyl substituted aryl,

cycloalkyl,

cycloalkylalkyl,

hydroxyalkyl,

25 alkoxyalkyl,

aryloxyalkyl,

haloalkyl,

carboxyalkyl,

alkoxycarbonylalkyl,

30 aminoalkyl,

(N-protected)aminoalkyl,

alkylaminoalkyl,

((N-protected)(alkyl)amino)alkyl,

dialkylaminoalkyl,

guanidinoalkyl,
lower alkenyl,
heterocyclic,
(heterocyclic)alkyl),
5 arylthioalkyl,
arylsulfonyalkyl,
(heterocyclic)thioalkyl,
(heterocyclic)sulfonylalkyl,
(heterocyclic)oxyalkyl,
10 arylalkoxyalkyl,
arylthioalkoxyalkyl,
arylalkylsulfonylalkyl,
(heterocyclic)alkoxyalkyl,
(heterocyclic)thioalkoxyalkyl,
15 (heterocyclic)alkylsulfonylalkyl,
cycloalkyloxyalkyl,
cycloalkylthioalkyl,
cycloalkylsulfonylalkyl,
cycloalkylalkoxyalkyl,
20 cycloalkylthioalkoxyalkyl,
cycloalkylalkylsulfonylalkyl,
aminocarbonyl,
alkylaminocarbonyl,
dialkylaminocarbonyl,
25 aroylalkyl,
(heterocyclic)carbonylalkyl,
polyhydroxyalkyl,
aminocarbonylalkyl,
alkylaminocarbonylalkyl,
30 dialkylaminocarbonylalkyl,
aryloxyalkyl, or
alkylsulfonylalkyl,

wherein heterocyclic is pyridyl, thiazolyl, isothiazolyl,
oxazolyl, isoxazolyl, furanyl, thienyl, tetrahydrofuranyl, tetrahydrothienyl and

tetrahydro[2H]pyranyl and wherein the heterocycle is unsubstituted or substituted with one to three substituents independently selected from hydroxy, halo, amino, alkylamino, dialkylamino, alkoxy, polyalkoxy, haloalkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, COOH, -SO₃H, lower alkenyl or lower alkyl;

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wherein R₇ is:

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C₁ - C₃ alkyl,

phenyl,

thioalkoxyalkyl,

(aryl)alkyl,

cycloalkyl,

cycloalkylalkyl,

hydroxyalkyl,

alkoxyalkyl,

aryloxyalkyl,

haloalkyl,

carboxyalkyl,

alkoxycarbonylalkyl,

aminoalkyl,

(N-protected)aminocalkyl,

alkylaminoalkyl,

((N-protected)(alkyl)amino)alkyl,

dialkylaminoalkyl,

guanidinoalkyl,

lower alkenyl,

heterocyclic,

(heterocyclic)alkyl),

arylthioalkyl,

arylsulfonylalkyl,

(heterocyclic)thioalkyl,

(heterocyclic)sulfonylalkyl,

(heterocyclic)oxyalkyl,

arylalkoxyalkyl,

arylthioalkoxyalkyl,

arylalkylsulfonylalkyl,

(heterocyclic))alkoxyalkyl,
 (heterocyclic)thioalkoxyalkyl,
 (heterocyclic)alkylsulfonylalkyl,
 cycloalkyloxyalkyl,
 cycloalkylthioalkyl,
 cycloalkylsulfonylalkyl,
 cycloalkylalkoxyalkyl,
 cycloalkylthioalkoxyalkyl,
 cycloalkylalkylsulfonylalkyl,
 aminocarbonyl,
 alkylaminocarbonyl,
 dialkylaminocarbonyl,
 aroylalkyl,
 (heterocyclic)carbonylalkyl,
 polyhydroxyalkyl,
 aminocarbonylalkyl,
 alkylaminocarbonylalkyl,
 dialkylaminocarbonylalkyl,
 aryloxyalkyl, or
 alkylsulfonylalkyl,

wherein heterocyclic is pyridyl, thiazolyl, isothiazolyl,
 oxazolyl, isoxazolyl, furanyl, thienyl, tetrahydrofuranyl, tetrahydrothienyl and
 tetrahydro[2H]pyranyl and wherein the heterocycle is unsubstituted or substituted with
 one to three substituents independently selected from hydroxy, halo, amino, alkylamino,
 dialkylamino, alkoxy, polyalkoxy, haloalkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl,
 COOH, -SO₃H, lower alkenyl or lower alkyl;

where X is -N, or -O, with the proviso that when X is O, R_B is absent;

and when X is N,

R_B is:

(I)-C₁-C₁₀ alkyl optionally substituted with one, two or three substituents
 selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH,

-SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, -OC=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, -S(=O)₀₋₂ R_{1-a} where R_{1-a} is as defined above, -NR_{1-a}C=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, -C=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, and -S(=O)₂ NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(II) -(CH₂)₀₋₃-(C₃-C₈) cycloalkyl where cycloalkyl can be optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -CO-OH, -CO-O-(C₁-C₄ alkyl), and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

10 (III) -(CR_{B-x}R_{B-y})₀₋₄-R_{B-aryl} where R_{B-x} and R_{B-y} are

(A) -H,

(B) C₁-C₄ alkyl optionally substituted with one or two -OH,

(C) C₁-C₄ alkoxy optionally substituted with one, two, or three of -

F,

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(D) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl,

(E) C₂-C₆ alkenyl containing one or two double bonds,

(F) C₂-C₆ alkynyl containing one or two triple bonds, or

(G) phenyl,

20 and where R_{B-x} and R_{B-y} are taken together with the carbon to which they are attached to form a carbocycle of three, four, five, six or seven carbon atoms, optionally where one carbon atom is replaced by a heteroatom selected from the group consisting of -O-, -S-, -SO₂-, and -NR_{N-2} where R_{N-2} is as defined above, and R_{B-aryl} is the same as R_{N-aryl} and is defined above

25 (IV) -(CR_{B-x}R_{B-y})₀₋₄-R_{B-heteroaryl} where R_{B-heteroaryl} is the same as R_{N-heteroaryl}, R_{B-x}, and R_{B-y} are as defined above,

(V) -(CR_{B-x}R_{B-y})₀₋₄-R_{B-aryl}-R_{B-aryl} where R_{B-aryl}, R_{B-x}, and R_{B-y} are as defined above,

(VI) -(CR_{B-x}R_{B-y})₀₋₄-R_{B-aryl}-R_{B-heteroaryl} where R_{B-aryl}, R_{B-heteroaryl}, R_{B-x} and R_{B-y} are as defined above,

30 (VII) -(CR_{B-x}R_{B-y})₀₋₄-R_{B-heteroaryl}-R_{B-aryl} where R_{B-heteroaryl}, R_{B-aryl}, R_{B-x} and R_{B-y} are as defined above,

(VIII) -(CR_{B-x}R_{B-y})₀₋₄-R_{B-heteroaryl}-R_{B-heteroaryl} where R_{B-heteroaryl}, R_{B-x} and R_{B-y} are as defined above,

(IX) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-aryl}}-\text{R}_{\text{B-heterocycle}}$ where $\text{R}_{\text{B-heterocycle}}$ is defined as R_1 -heterocycle, and where $\text{R}_{\text{B-aryl}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

(X) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heteroaryl}}-\text{R}_{\text{B-heterocycle}}$ where $\text{R}_{\text{B-heteroaryl}}$, $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

5 (XI) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heterocycle}}-\text{R}_{\text{B-aryl}}$ where $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-aryl}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

(XII) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heterocycle}}-\text{R}_{\text{B-heteroaryl}}$ where $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-heteroaryl}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

10 (XIII) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heterocycle}}-\text{R}_{\text{B-heterocycle}}$ where $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

(XIV) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heterocycle}}$ where $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

(XV) $-[\text{C}(\text{R}_{\text{B-1}})(\text{R}_{\text{B-2}})]_{1-3}-\text{CO}-\text{N}-(\text{R}_{\text{B-3}})_2$ where $\text{R}_{\text{B-1}}$ and $\text{R}_{\text{B-2}}$ are the same or different and are selected from the group consisting of:

15 (A) -H,

(B) $\text{C}_1\text{-C}_6$ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

20 (C) $\text{C}_2\text{-C}_6$ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(D) $\text{C}_2\text{-C}_6$ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(E) $-(\text{CH}_2)_{1-2}-\text{S}(\text{O})_{0-2}-(\text{C}_1\text{-C}_6 \text{ alkyl})$,

25 (F) $-(\text{CH}_2)_{0-4}-\text{C}_3\text{-C}_7$ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(G) $-(C_1-C_4 \text{ alkyl})-R_{B'\text{-aryl}}$ where $R_{B'\text{-aryl}}$ is as defined above for R_1 .

aryl,

(H) $-(C_1-C_4 \text{ alkyl})-R_{B\text{-heteroaryl}}$ where $R_{B\text{-heteroaryl}}$ is as defined above,

(I) $-(C_1-C_4 \text{ alkyl})-R_{B\text{-heterocycle}}$ where $R_{B\text{-heterocycle}}$ is as defined above,

5 (J) $-R_{B\text{-heteroaryl}}$ where $R_{B\text{-heteroaryl}}$ is as defined above,

(K) $-R_{B\text{-heterocycle}}$ where $R_{B\text{-heterocycle}}$ is as defined above,

(M) $-(CH_2)_{1-4}-R_{B-4}-(CH_2)_{0-4}-R_{B'\text{-aryl}}$ where R_{B-4} is $-O-$, $-S-$ or $-NR_{B-5}-$ where R_{B-5} is C_1-C_6 alkyl, and where $R_{B'\text{-aryl}}$ is defined above,

10 (N) $-(CH_2)_{1-4}-R_{B-4}-(CH_2)_{0-4}-R_{B\text{-heteroaryl}}$ where R_{B-4} and $R_{B\text{-heteroaryl}}$ are as defined above, and

(O) $-R_{B'\text{-aryl}}$ where $R_{B'\text{-aryl}}$ is as defined above,

and where R_{B-3} is the same or different and is:

(A) $-H$,

15 (B) $-C_1-C_6$ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

20 (C) C_2-C_6 alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

25 (D) C_2-C_6 alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(E) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

30 (F) $-R_{B'\text{-aryl}}$ where $R_{B'\text{-aryl}}$ is as defined above,

(G) $-R_{B\text{-heteroaryl}}$ where $R_{B\text{-heteroaryl}}$ is as defined above,

(H) $-R_{B\text{-heterocycle}}$ where $R_{B\text{-heterocycle}}$ is as defined above,

(I) $-(C_1-C_4 \text{ alkyl})-R_{B'\text{-aryl}}$ where $R_{B'\text{-aryl}}$ is as defined above,

(J) $-(C_1-C_4 \text{ alkyl})-R_{B\text{-heteroaryl}}$ where $R_{B\text{-heteroaryl}}$ is as defined above,

(K) $-(C_1-C_4 \text{ alkyl})-R_{B\text{-heterocycle}}$ where $R_{B\text{-heterocycle}}$ is as defined

above, or

(XVI) $-\text{CH}(R_{B\text{-aryl}})_2$ where $R_{B\text{-aryl}}$ are the same or different and are as
5 defined above,

(XVII) $-\text{CH}(R_{B\text{-heteroaryl}})_2$ where $R_{B\text{-heteroaryl}}$ are the same or different and are
as defined above,

(XVIII) $-\text{CH}(R_{B\text{-aryl}})(R_{B\text{-heteroaryl}})$ where $R_{B\text{-aryl}}$ and $R_{B\text{-heteroaryl}}$ are as
defined above,

10 (XIX) -cyclopentyl, -cyclohexyl, or -cycloheptyl ring fused to $R_{B\text{-aryl}}$ or $R_{B\text{-heteroaryl}}$ or $R_{B\text{-heterocycle}}$ where $R_{B\text{-aryl}}$ or $R_{B\text{-heteroaryl}}$ or $R_{B\text{-heterocycle}}$ are as defined above where
one carbon of cyclopentyl, cyclohexyl, or -cycloheptyl is optionally replaced with NH,
NR_{N-5}, O, or S(=O)₀₋₂, and where cyclopentyl, cyclohexyl, or -cycloheptyl can be
optionally substituted with one or two $-C_1-C_3$ alkyl, -F, -OH, -SH, $-C\equiv N$, -CF₃, C_1-C_6
15 alkoxy, =O, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(XX) C_2-C_{10} alkenyl containing one or two double bonds optionally
substituted with one, two or three substituents selected from the group consisting of C_1-C_3
alkyl, -F, -Cl, -Br, -I, -OH, -SH, $-C\equiv N$, -CF₃, C_1-C_6 alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b}
where R_{1-a} and R_{1-b} are as defined above,

20 (XXI) C_2-C_{10} alkynyl containing one or two triple bonds optionally
substituted with one, two or three substituents selected from the group consisting of C_1-C_3
alkyl, -F, -Cl, -Br, -I, -OH, -SH, $-C\equiv N$, -CF₃, C_1-C_6 alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b}
where R_{1-a} and R_{1-b} are as defined above,

(XXI) $-(CH_2)_{0-1}-\text{CHR}_{C-6}-(CH_2)_{0-1}-R_{B\text{-aryl}}$ where $R_{B\text{-aryl}}$ is as defined above
25 and R_{C-6} is $-(CH_2)_{0-6}-\text{OH}$,

(XXII) $-(CH_2)_{0-1}-\text{CHR}_{B-6}-(CH_2)_{0-1}-R_{B\text{-heteroaryl}}$ where $R_{B\text{-heteroaryl}}$ and R_{C-6} is
as defined above,

(XXIII) $-\text{CH}(-R_{B\text{-aryl}} \text{ or } R_{B\text{-heteroaryl}})-\text{CO}-\text{O}(C_1-C_4 \text{ alkyl})$ where $R_{B\text{-aryl}}$ and
 $R_{B\text{-heteroaryl}}$ are as defined above,

30 (XXIV) $-\text{CH}(-\text{CH}_2-\text{OH})-\text{CH}(-\text{OH})-\text{micro-NO}_2$,

(XXV) $(C_1-C_6 \text{ alkyl})-\text{O}-(C_1-C_6 \text{ alkyl})-\text{OH}$,

(XXVII) $-\text{CH}_2-\text{NH}-\text{CH}_2-\text{CH}(-\text{O}-\text{CH}_2-\text{CH}_3)_2$,

(XXVIII) -H, or

(XXIX) $-(CH_2)_{0-6}-C(=NR_{1-a})(NR_{1-a}R_{1-b})$ where R_{1-a} and R_{1-b} are as defined above;

or a pharmaceutically acceptable salt thereof.

5 2. A substituted amine according to claim 1

where R_1 is:

$-(CH_2)_{0-1}-(R_{1-aryl})$, or

$-(CH_2)_{n1}-(R_{1-heteroaryl})$;

where R_N is:

10 $R_{N-1}-X_N$, where X_N is selected from the group consisting of:

$-CO-$, and

$-SO_2-$,

where R_{N-1} is selected from the group consisting of:

$-R_{N-aryl}$ and

15 $-R_{N-heteroaryl}$, or

$-CO-CH(-(CH_2)_{0-2}-O-R_{N-10})-(CH_2)_{0-2}-R_{N-aryl}/R_{N-heteroaryl}$;

where R_A is:

$-C_1-C_8$ alkyl,

$-(CH_2)_{0-3}-(C_3-C_7)$ cycloalkyl,

20 $-(CR_{A-x}R_{A-y})_{0-4}-R_{A-aryl}$,

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heteroaryl}$,

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heterocycle}$,

$-cyclopentyl$ or $-cyclohexyl$ ring fused to R_{A-aryl} or $R_{A-heteroaryl}$ or R_{A-}

heterocycle;

25 where X is $-N$ or $-O$, with the proviso that when X is O , R_B is absent;

and when X is N ,

R_B is:

$-C_1-C_8$ alkyl,

$-(CH_2)_{0-3}-(C_3-C_7)$ cycloalkyl,

30 $-(CR_{A-x}R_{A-y})_{0-4}-R_{A-aryl}$,

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heteroaryl}$,

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heterocycle}$,

$-cyclopentyl$ or $-cyclohexyl$ ring fused to R_{A-aryl} or $R_{A-heteroaryl}$ or R_{A-}

heterocycle.

3. A substituted amine according to claim 2

where R_1 is:

$-(CH_2)-(R_{1-aryl})$, or

$-(CH_2)-(R_{1-heteroaryl})$;

where R_2 is $-H$;

where R_3 is $-H$;

where R_N is:

$R_{N-1}-X_N$ where X_N is:

$-CO-$,

where R_{N-1} is selected from the group consisting of:

$-R_{N-aryl}$, and

$-R_{N-heteroaryl}$;

where R_A is:

$-C_1-C_8$ alkyl,

$-(CH_2)_{0-3}-(C_3-C_7)$ cycloalkyl,

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-aryl}$,

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heteroaryl}$,

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heterocycle}$,

-cyclopentyl or -cyclohexyl ring fused to R_{A-aryl} or $R_{A-heteroaryl}$ or R_{A-}

heterocycle;

where X is $-N$ or $-O$, with the proviso that when X is O , R_B is absent;

and when X is N ,

R_B is:

$-C_1-C_8$ alkyl,

$-(CH_2)_{0-3}-(C_3-C_7)$ cycloalkyl,

$-(CR_{B-x}R_{B-y})_{0-4}-R_{B-aryl}$,

$-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heteroaryl}$,

$-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heterocycle}$,

-cyclopentyl or -cyclohexyl ring fused to R_{B-aryl} or $R_{B-heteroaryl}$ or R_{B-}

heterocycle.

4. A substituted amine according to claim 3,

where R_A is:

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-aryl}$,

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heteroaryl}$, or

-cyclopentyl or -cyclohexyl ring fused to a R_{A-aryl} or $R_{A-heteroaryl}$ or R_{A-}

heterocycle; and

5

where R_B is:

$-(CR_{B-x}R_{B-y})_{0-4}-R_{B-aryl}$,

$-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heteroaryl}$, or

-cyclopentyl or -cyclohexyl ring fused to R_{B-aryl} or $R_{B-heteroaryl}$ or R_{B-}

heterocycle.

10

5. A substituted amine according to claim 1 where R_1 is

$-(CH_2)-(R_{1-aryl})$ where R_{1-aryl} is phenyl.

6. A substituted amine according to claim 1 where R_1 is

15 $-(CH_2)-(R_{1-aryl})$ where R_{1-aryl} is phenyl substituted with two -F.

7. A substituted amine according to claim 6 where the -F substitution is 3,5-difluorobenzyl.

20 8. A substituted amine according to claim 1 where R_2 is -H.

9. A substituted amine according to claim 1 where R_3 is -H.

10. A substituted amine according to claim 1 where R_N is

25

$R_{N-1}-X_N$, where X_N is -CO-, where R_{N-1} is R_{N-aryl} where R_{N-aryl} is phenyl substituted with one -CO-NR_{N-2}R_{N-3} where the substitution on phenyl is 1,3-.

11. A substituted amine according to claim 10 where R_{N-2} and R_{N-3} are the same and are C₃ alkyl.

30

12. A substituted amine according to claim 1 where R_N is

$R_{N-1}-X_N$ where X_N is -CO-, and where R_{N-1} is R_{N-aryl} where R_{N-aryl} is phenyl substituted with one C₁ alkyl and with one -CO-NR_{N-2}R_{N-3} where the substitution on the phenyl is 1,3,5-.

13. A substituted amine according to claim 12 where R_{N-2} and R_{N-3} are the same and are C_3 alkyl.

5 14. A substituted amine according to claim 1 where R_N is $R_{N-1}-X_N$, where X_N is $-CO-$, and where R_{N-1} is $R_{N-heteroaryl}$ where $R_{N-heteroaryl}$ is substituted with one $-CO-NR_{N-2}R_{N-3}$.

10 15. A substituted amine according to claim 14 where R_{N-2} and R_{N-3} are the same and are C_3 alkyl.

16. A substituted amine according to claim 1 where R_A is:

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-aryl}$ where R_{A-aryl} is phenyl,

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heteroaryl}$,

15 $-\text{cyclopentyl}$ or $-\text{cyclohexyl}$ ring fused to a R_{A-aryl} or $R_{A-heteroaryl}$ or $R_{A-heterocycle}$.

17. A substituted amine according to claim 16 where R_A is:

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-aryl}$ where R_{A-aryl} is phenyl.

20 18. A substituted amine according to claim 17 where phenyl is substituted in the 3-position or 3,5-positions.

19. A substituted amine according to claim 16 where R_A is

$-(CH_2)-R_{A-heteroaryl}$.

25

20. A substituted amine according to claim 16 where R_A is:

$-(CH_2)-R_{A-heterocycle}$.

21. A substituted amine according to claim 16 where R_A is:

30 $-\text{cyclohexyl}$ ring fused to a phenyl ring.

22. A substituted amine according to claim 1 where R_B is:

$-(CR_{B-x}R_{B-y})_{0-4}-R_{B-aryl}$ where R_{B-aryl} is phenyl,

$-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heteroaryl}$,

~~-cyclopentyl or -cyclohexyl ring fused to a R_B-aryl or R_B-heteroaryl or R_B-heterocycle.~~

23. A substituted amine according to claim 22 where R_B is:

~~-(CR_{B-x}R_{B-y})₀₋₄-R_B-aryl where R_B-aryl is phenyl.~~

5

24. A substituted amine according to claim 23 where phenyl is substituted in the 3-position or 3,5-positions.

25. A substituted amine according to claim 22 where R_B is:

10

~~-(CH₂)-R_B-heteroaryl.~~

26. A substituted amine according to claim 22 where R_B is:

~~-(CH₂)-R_B-heterocycle.~~

15

27. A substituted amine according to claim 22 where R_B is:

~~-cyclohexyl ring fused to a phenyl ring.~~

28. A substituted amine according to claim 1, where R_B is absent.

20

29. A substituted amine according to claim 1, chosen from the group consisting of:

~~N-[1-(3,5-Difluoro-benzyl)-2-hydroxy-3-(N'-methyl-N'-phenyl-hydrazino)-propyl]-5-methyl-N',N'-dipropyl-isophthalamide,~~

~~N-{1-(3,5-Difluoro-benzyl)-2-hydroxy-3-[N'-methyl-N'-(4-methyl-pentanoyl)-hydrazino]-propyl}-5-methyl-N',N'-dipropyl-isophthalamide, and~~

25

~~N-[1-(3,5-Difluoro-benzyl)-2-hydroxy-3-phenoxyamino-propyl]-5-methyl-N',N'-dipropyl-isophthalamide.~~

30. A substituted amine according to claim 1 where the pharmaceutically acceptable salt is selected from the group consisting of salts of the following acids acetic, aspartic,

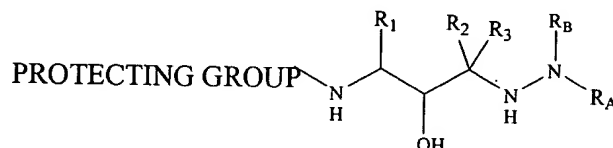
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benzenesulfonic, benzoic, bicarbonic, bisulfuric, bitartaric, butyric, calcium edetate, camsyllic, carbonic, chlorobenzoic, citric, edetic, edisyllic, estolic, esyl, esylic, formic, fumaric, gluceptic, gluconic, glutamic, glycolylarsanilic, hexamic, hexylresorcinoic, hydrabamic, hydrobromic, hydrochloric, hydroiodic, hydroxynaphthoic, isethionic, lactic, lactobionic, maleic, malic, malonic, mandelic, methanesulfonic, methylnitric,

methysulfuric, mucic, muconic, napsylic, nitric, oxalic, p-nitromethanesulfonic, pamoic, pantothenic, phosphoric, monohydrogen phosphoric, dihydrogen phosphoric, phthalic, polygalactouronic, propionic, salicylic, stearic, succinic, sulfamic, sulfanilic, sulfonic, sulfuric, tannic, tartaric, teoclic and toluenesulfonic.

5

31. A protected compound of the formula (II)



II

10

where R_1 is:

(I) C_1 - C_6 alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1 - C_3 alkyl, C_1 - C_7 alkyl (optionally substituted with C_1 - C_3 alkyl and C_1 - C_3 alkoxy), -F, -Cl, -Br, -I, -OH, -SH, -C \equiv N, -CF $_3$, C_1 - C_3 alkoxy, -NR $_{1-a}$ R $_{1-b}$ where R $_{1-a}$ and R $_{1-b}$ are -H or C_1 - C_6 alkyl, and -OC=O NR $_{1-a}$ R $_{1-b}$ where R $_{1-a}$ and R $_{1-b}$ are as defined above,

15

(II) -CH $_2$ -S(O) $_{0-2}$ -(C_1 - C_6 alkyl),

(III) -CH $_2$ -CH $_2$ -S(O) $_{0-2}$ -(C_1 - C_6 alkyl),

(IV) C_2 - C_6 alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C \equiv N, -CF $_3$, C_1 - C_3 alkoxy, and -NR $_{1-a}$ R $_{1-b}$ where R $_{1-a}$ and R $_{1-b}$ are -H or C_1 - C_6 alkyl,

20

(V) C_2 - C_6 alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C \equiv N, -CF $_3$, C_1 - C_3 alkoxy, and -NR $_{1-a}$ R $_{1-b}$ where R $_{1-a}$ and R $_{1-b}$ are -H or C_1 - C_6 alkyl,

25

(VI) -(CH $_2$) $_{n_1}$ -(R $_{1-aryl}$) where n_1 is zero or one and where R $_{1-aryl}$ is phenyl, 1-naphthyl, 2-naphthyl and indanyl, indenyl, dihydronaphthalyl, or tetralinyl optionally substituted with one, two, three or four of the following substituents on the aryl ring:

(A) C_1 - C_6 alkyl optionally substituted with one, two or three substituents selected from the group consisting of C_1 - C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C \equiv N, -CF $_3$, and C_1 - C_3 alkoxy, and -NR $_{1-a}$ R $_{1-b}$ where R $_{1-a}$ and R $_{1-b}$ are as defined above,

30

(B) C_2 - C_6 alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -

Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(C) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(D) -F, Cl, -Br or -I,

(F) -C₁-C₆ alkoxy optionally substituted with one, two or three of -F,

(G) -NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are as defined below,

(H) -OH,

(I) -C≡N,

(J) C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(K) -CO-(C₁-C₄ alkyl),

(L) -SO₂-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(M) -CO-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, or

(N) -SO₂-(C₁-C₄ alkyl),

(VII) -(CH₂)_{n1}-(R_{1-heteroaryl}) where n₁ is as defined above and where R_{1-heteroaryl} is selected from the group consisting of:

pyridinyl,

pyrimidinyl,

quinolinyl,

benzothienyl,

indolyl,

indolinyl,

pyridazinyl,

pyrazinyl,

isoquinolyl,

quinazolinyl,

quinoxalinyl,

phthalazinyl,

5

imidazolyl,
isoxazolyl,
pyrazolyl,
oxazolyl,
thiazolyl,
indolizinyll,
indazolyl,
benzothiazolyl,
benzimidazolyl,

10

benzofuranyl,
furanyl,
thienyl,
pyrrolyl,

15

oxadiazolyl,
thiadiazolyl,
triazolyl,
tetrazolyl,
oxazolopyridinyl,
imidazopyridinyl,
isothiazolyl,

20

naphthyridinyl,
cinnolinyll,
carbazolyl,

25

beta-carbolinyl,
isochromanyl,
chromanyl,
tetrahydroisoquinolinyll,
isoindolinyll,

30

isobenzotetrahydrofuranyl,
isobenzotetrahydrothienyl,
isobenzothieryl,
benzoxazolyl,
pyridopyridinyl,
benzotetrahydrofuranyl,

5 benzotetrahydrothienyl,
purinyl,
benzodioxolyl,
triazinyl,
phenoxazinyl,
phenothiazinyl,
pteridinyl,
benzothiazolyl,
10 imidazopyridinyl,
imidazothiazolyl,
dihydrobenzisoxazinyl,
benzisoxazinyl,
benzoxazinyl,
15 dihydrobenzisothiazinyl,
benzopyranyl,
benzothiopyranyl,
coumarinyl,
isocoumarinyl,
20 chromonyl,
chromanonyl,
pyridinyl-N-oxide,
tetrahydroquinolinyl
dihydroquinolinyl
25 dihydroquinolinonyl
dihydroisoquinolinonyl
dihydrocoumarinyl
dihydroisocoumarinyl
isoindolinonyl
30 benzodioxanyl
benzoxazolinonyl
pyrrolyl N-oxide,
pyrimidinyl N-oxide,
pyridazinyl N-oxide,
pyrazinyl N-oxide,

5 quinoliny N-oxide,
 indolyl N-oxide,
 indoliny N-oxide,
 isoquinolyl N-oxide,
 quinazoliny N-oxide,
 quinoxaliny N-oxide,
 phthalaziny N-oxide,
 imidazolyl N-oxide,
 10 isoxazolyl N-oxide,
 oxazolyl N-oxide,
 thiazolyl N-oxide,
 indoliziny N-oxide,
 indazolyl N-oxide,
 15 benzothiazolyl N-oxide,
 benzimidazolyl N-oxide,
 pyrrolyl N-oxide,
 oxadiazolyl N-oxide,
 thiadiazolyl N-oxide,
 20 triazolyl N-oxide,
 tetrazolyl N-oxide,
 benzothiopyranyl S-oxide, and
 benzothiopyranyl S,S-dioxide,

25 where the $R_{1\text{-heteroaryl}}$ group is bonded to $-(CH_2)_{n1}-$ by any ring atom of the parent $R_{1\text{-heteroaryl}}$ group substituted by hydrogen such that the new bond to the $R_{1\text{-heteroaryl}}$ group replaces the hydrogen atom and its bond, where heteroaryl is optionally substituted with one, two, three or four of:

- 30 (1) C_1-C_6 alkyl optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,
 (2) C_2-C_6 alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of $-F$, $-Cl$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are $-H$ or C_1-C_6 alkyl,

(3) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

5 (4) -F, Cl, -Br or -I,

(6) -C₁-C₆ alkoxy optionally substituted with one, two, or three of -F,

(7) -NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are as defined below,

(8) -OH,

10 (9) -C≡N,

(10) C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(11) -CO-(C₁-C₄ alkyl),

15 (12) -SO₂-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(13) -CO-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, or

(14) -SO₂-(C₁-C₄ alkyl), with the proviso that when n₁ is zero R_{1-heteroaryl} is not bonded to the carbon chain by nitrogen; or

(VIII) -(CH₂)_{n1}-(R_{1-heterocycle}) where n₁ is as defined above and R_{1-heterocycle} is selected from the group consisting of:

morpholinyl,

thiomorpholinyl,

25 thiomorpholinyl S-oxide,

thiomorpholinyl S,S-dioxide,

piperazinyl,

homopiperazinyl,

pyrrolidinyl,

30 pyrrolinyl,

tetrahydropyranyl,

piperidinyl,

tetrahydrofuranyl,

tetrahydrothienyl,
 homopiperidinyI,
 homomorpholinyl,
 homothiomorpholinyl,
 5 homothiomorpholinyl S,S-dioxide,
 oxazolidinonyl,
 dihydropyrazolyl,
 dihydropyrrolyl,
 dihydropyrazinyl,
 10 dihydropyridinyl,
 dihydropyrimidinyl,
 dihydrofuryl,
 dihydropyranyl,
 tetrahydrothienyl S-oxide,
 15 tetrahydrothienyl S,S-dioxide, and
 homothiomorpholinyl S-oxide,

where the $R_{1\text{-heterocycle}}$ group is bonded by any atom of the parent R_1 -
 heterocycle group substituted by hydrogen such that the new bond to the $R_{1\text{-heterocycle}}$ group
 replaces the hydrogen atom and its bond, where heterocycle is optionally substituted with
 20 one, two, three or four:

(1) $C_1\text{-}C_6$ alkyl optionally substituted with one, two or three
 substituents selected from the group consisting of $C_1\text{-}C_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH,
 -C \equiv N, -CF₃, $C_1\text{-}C_3$ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

25 (2) $C_2\text{-}C_6$ alkenyl with one or two double bonds, optionally
 substituted with one, two or three substituents selected from the group consisting of -F, -
 Cl, -OH, -SH, -C \equiv N, -CF₃, $C_1\text{-}C_3$ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or $C_1\text{-}$
 C_6 alkyl,

30 (3) $C_2\text{-}C_6$ alkynyl with one or two triple bonds, optionally
 substituted with one, two or three substituents selected from the group consisting of -F, -
 Cl, -OH, -SH, -C \equiv N, -CF₃, $C_1\text{-}C_3$ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or $C_1\text{-}$
 C_6 alkyl,

(4) -F, Cl, -Br or -I,

(5) $C_1\text{-}C_6$ alkoxy,

(6) $-C_1-C_6$ alkoxy optionally substituted with one, two, or three $-F$,

(7) $-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are as defined below,

(8) $-OH$,

5 (9) $-C\equiv N$,

(10) C_3-C_7 cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of $-F$, $-Cl$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are $-H$ or C_1-C_6 alkyl,

(11) $-CO-(C_1-C_4 \text{ alkyl})$,

10 (12) $-SO_2-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(13) $-CO-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(14) $-SO_2-(C_1-C_4 \text{ alkyl})$, or

15 (15) $=O$, with the proviso that when n_1 is zero $R_{1-\text{heterocycle}}$ is not bonded to the carbon chain by nitrogen;

where R_2 is:

(I) $-H$,

20 (II) C_1-C_6 alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(III) $-(CH_2)_{0-4}-R_{2-1}$ where R_{2-1} is $R_{1-\text{aryl}}$ or $R_{1-\text{heteroaryl}}$ where $R_{1-\text{aryl}}$ and $R_{1-\text{heteroaryl}}$ are as defined above;

25 (IV) C_2-C_6 alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of $-F$, $-Cl$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are $-H$ or C_1-C_6 alkyl,

(V) C_2-C_6 alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of $-F$, $-Cl$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are $-H$ or C_1-C_6 alkyl, or

30 (VI) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of $-F$, $-Cl$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are $-H$ or C_1-C_6 alkyl;

where R_3 is:

(I)-H,

(II) C_1 - C_6 alkyl, optionally substituted with one, two or three substituents
 5 selected from the group consisting of C_1 - C_3 alkyl, -F, -Cl, -Br, -I, -OH,
 -SH, -C \equiv N, -CF₃, C_1 - C_3 alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(III) -(CH₂)₀₋₄-R₂₋₁ where R₂₋₁ is R_{1-aryl} or R_{1-heteroaryl} where R_{1-aryl} and R_{1-heteroaryl} are as defined above

(IV) C_2 - C_6 alkenyl with one or two double bonds,

10 (V) C_2 - C_6 alkynyl with one or two triple bonds; or

(VI) -(CH₂)₀₋₄- C_3 - C_7 cycloalkyl, optionally substituted with one, two or
 three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C \equiv N, -CF₃,
 C_1 - C_3 alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C_1 - C_6 alkyl,

and where R₂ and R₃ are taken together with the carbon to which they are
 15 attached to form a carbocycle of three, four, five, six, or seven carbon atoms, optionally
 where one carbon atom is replaced by a heteroatom selected from the group consisting of
 -O-, -S-, -SO₂-, and -NR_{N-2}-, where R_{N-2} is selected from the group consisting of:

(a) -H,

(b) C_1 - C_6 alkyl optionally substituted with one
 20 substituent selected from the group consisting of:

(i) -OH, and

(ii) -NH₂,

(c) C_1 - C_6 alkyl optionally substituted with one,
 25 two, or three -F, -Cl, -Br, or -I,

(d) C_3 - C_7 cycloalkyl,

(e) -(C_1 - C_2 alkyl)-(C_3 - C_7 cycloalkyl),

(f) -(C_1 - C_6 alkyl)-O-(C_1 - C_3 alkyl),

(g) C_2 - C_6 alkenyl with one or two double bonds,

(h) C_2 - C_6 alkynyl with one or two triple bonds,

30 (i) C_1 - C_6 alkyl chain with one double bond and one
 triple bond,

(j) -R_{1-aryl} where R_{1-aryl} is as defined above, and

(k) -R_{1-heteroaryl} where R_{1-heteroaryl} is as defined above;

where R_N is:

(I) $R_{N-1}-X_N$ - where X_N is selected from the group consisting of:

(A) $-\text{CO}-$,

(B) $-\text{SO}_2-$,

(C) $-(\text{CR}'\text{R}'')_{1-6}$ where R' and R'' are the same or different and are $-\text{H}$ and C_1-C_4 alkyl,

(D) $-\text{CO}-(\text{CR}'\text{R}'')_{1-6}-X_{N-1}$ where X_{N-1} is selected from the group consisting of $-\text{O}-$, $-\text{S}-$ and $-\text{NR}'-$ and where R' and R'' are as defined above, and

(E) a single bond;

where R_{N-1} is selected from the group consisting of:

(A) $R_{N\text{-aryl}}$ where $R_{N\text{-aryl}}$ is phenyl, 1-naphthyl, 2-naphthyl, tetralinyl, indanyl, 6,7,8,9-tetrahydro-5H-benzo[a]cycloheptenyl, or dihydronaphthyl optionally substituted with one, two or three of the following substituents which can be the same or different and are:

(1) C_1-C_6 alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_3 alkoxy, and $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(2) $-\text{OH}$,

(3) $-\text{NO}_2$,

(4) $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$,

(5) $-\text{CO}-\text{OH}$,

(6) $-\text{C}\equiv\text{N}$,

(7) $-(\text{CH}_2)_{0-4}-\text{CO}-\text{NR}_{N-2}\text{R}_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are selected from the group consisting of:

(a) $-\text{H}$,

(b) C_1-C_6 alkyl optionally substituted with one substituent selected from the group consisting of:

(i) $-\text{OH}$, and

(ii) $-\text{NH}_2$,

(c) C_1-C_6 alkyl optionally substituted with one, two, or three $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, or $-\text{I}$,

- (d) -C₃-C₇ cycloalkyl,
(e) -(C₁-C₂ alkyl)-(C₃-C₇ cycloalkyl),
(f) -(C₁-C₆ alkyl)-O-(C₁-C₃ alkyl),
(g) -C₂-C₆ alkenyl with one or two double bonds,
(h) -C₂-C₆ alkynyl with one or two triple bonds,
(i) -C₁-C₆ alkyl chain with one double bond and one triple bond,
(j) -R_{1-aryl} where R_{1-aryl} is as defined above, and
(k) -R_{1-heteroaryl} where R_{1-heteroaryl} is as defined above,
(8) -(CH₂)₀₋₄-CO-(C₁-C₁₂ alkyl),
(9) -(CH₂)₀₋₄-CO-(C₂-C₁₂ alkenyl with one, two or three double bonds),
(10) -(CH₂)₀₋₄-CO-(C₂-C₁₂ alkynyl with one, two or three triple bonds),
(11) -(CH₂)₀₋₄-CO-(C₃-C₇ cycloalkyl),
(12) -(CH₂)₀₋₄-CO-R_{1-aryl} where R_{1-aryl} is as defined above,
(13) -(CH₂)₀₋₄-CO-R_{1-heteroaryl} where R_{1-heteroaryl} is as defined above,
(14) -(CH₂)₀₋₄-CO-R_{1-heterocycle} where R_{1-heterocycle} is as defined above,
(15) -(CH₂)₀₋₄-CO-R_{N-4} where R_{N-4} is selected from the group consisting of morpholinyl, thiomorpholinyl, piperazinyl, piperidinyl, homomorpholinyl, homothiomorpholinyl, homothiomorpholinyl S-oxide, homothiomorpholinyl S,S-dioxide, pyrrolinyl and pyrrolidinyl where each group is optionally substituted with one, two, three, or four of C₁-C₆ alkyl,
(16) -(CH₂)₀₋₄-CO-O-R_{N-5} where R_{N-5} is selected from the group consisting of:
(a) C₁-C₆ alkyl,
(b) -(CH₂)₀₋₂-(R_{1-aryl}) where R_{1-aryl} is as defined above,
(c) C₂-C₆ alkenyl containing one or two double bonds,
(d) C₂-C₆ alkynyl containing one or two triple bonds,

(e) C₃-C₇ cycloalkyl, and

(f) $-(CH_2)_{0-2}-(R_{1-\text{heteroaryl}})$ where R_{1-heteroaryl} is as defined above,

5 defined above, (17) $-(CH_2)_{0-4}-SO_2-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are as

(18) $-(CH_2)_{0-4}-SO-(C_1-C_8 \text{ alkyl})$,

(19) $-(CH_2)_{0-4}-SO_2-(C_1-C_{12} \text{ alkyl})$,

(20) $-(CH_2)_{0-4}-SO_2-(C_3-C_7 \text{ cycloalkyl})$,

10 (21) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-O-R_{N-5}$ where R_{N-5} can be the same or different and is as defined above,

(22) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-N(R_{N-5})_2$, where R_{N-5} can be the same or different and is as defined above,

(23) $-(CH_2)_{0-4}-N-CS-N(R_{N-5})_2$, where R_{N-5} can be the same or different and is as defined above,

15 (24) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-R_{N-2}$ where R_{N-5} and R_{N-2} can be the same or different and are as defined above,

(25) $-(CH_2)_{0-4}-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} can be the same or different and are as defined above,

20 (26) $-(CH_2)_{0-4}-R_{N-4}$ where R_{N-4} is as defined above,

(27) $-(CH_2)_{0-4}-O-CO-(C_1-C_6 \text{ alkyl})$,

(28) $-(CH_2)_{0-4}-O-P(O)-(OR_{N-\text{aryl-1}})_2$ where R_{N-aryl-1} is -H or C₁-C₄ alkyl,

(29) $-(CH_2)_{0-4}-O-CO-N(R_{N-5})_2$ where R_{N-5} is as defined above,

25 (30) $-(CH_2)_{0-4}-O-CS-N(R_{N-5})_2$ where R_{N-5} is as defined above,

(31) $-(CH_2)_{0-4}-O-(R_{N-5})_2$ where R_{N-5} is as defined above,

(32) $-(CH_2)_{0-4}-O-(R_{N-5})_2-COOH$ where R_{N-5} is as defined above,

30 (33) $-(CH_2)_{0-4}-S-(R_{N-5})_2$ where R_{N-5} is as defined above,

(34) $-(CH_2)_{0-4}-O-(C_1-C_6 \text{ alkyl})$ optionally substituted with one, two, three, four, or five of -F),

(35) C₃-C₇ cycloalkyl,

(36) C₂-C₆ alkenyl with one or two double bonds optionally substituted with C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(37) C₂-C₆ alkynyl with one or two triple bonds optionally substituted with C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(38) -(CH₂)₀₋₄-N(-H or R_{N-5})-SO₂-R_{N-2} where R_{N-5} and R_{N-2} can be the same or different and are as described above, or

(39) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl,
(B) -R_{N-heteroaryl} where R_{N-heteroaryl} is selected from the group consisting of:

pyridinyl,
pyrimidinyl,
quinolinyl,
benzothienyl,
indolyl,
indolinyl,
pyridazinyl,
pyrazinyl,
isoindolyl,
isoquinolyl,
quinazolinyl,
quinoxalinyl,
phthalazinyl,
imidazolyl,
isoxazolyl,
pyrazolyl,
oxazolyl,
thiazolyl,
indolizinyl,
indazolyl,
benzothiazolyl,
benzimidazolyl,

benzofuranyl,
furanyl,
thienyl,
pyrrolyl,
5 oxadiazolyl,
thiadiazolyl,
triazolyl,
tetrazolyl,
oxazolopyridinyl,
10 imidazopyridinyl,
isothiazolyl,
naphthyridinyl,
cinnolinyl,
carbazolyl,
15 beta-carbolinyl,
isochromanyl,
chromanyl,
tetrahydroisoquinolinyl,
isoindolinyl,
20 isobenzotetrahydrofuranyl,
isobenzotetrahydrothienyl,
isobenzothienyl,
benzoxazolyl,
pyridopyridinyl,
25 benzotetrahydrofuranyl,
benzotetrahydrothienyl,
purinyl,
benzodioxolyl,
triazinyl,
30 phenoxazinyl,
phenothiazinyl,
pteridinyll,
benzothiazolyl,
imidazopyridinyl,

imidazothiazolyl,
dihydrobenzisoxazinyl,
benzisoxazinyl,
benzoxazinyl,
5 dihydrobenzisothiazinyl,
benzopyranyl,
benzothiopyranyl,
coumarinyl,
isocoumarinyl,
10 chromonyl,
chromanonyl,
pyridinyl-N-oxide,
tetrahydroquinolinyl,
dihydroquinolinyl,
15 dihydroquinolinonyl,
dihydroisoquinolinonyl,
dihydrocoumarinyl,
dihydroisocoumarinyl,
isoindolinonyl,
20 benzodioxanyl,
benzoxazolinonyl,
pyrrolyl N-oxide,
pyrimidinyl N-oxide,
pyridazinyl N-oxide,
25 pyrazinyl N-oxide,
quinolinyl N-oxide,
indolyl N-oxide,
indolinyl N-oxide,
isoquinolyl N-oxide,
30 quinazolinyl N-oxide,
quinoxalinyl N-oxide,
phthalazinyl N-oxide,
imidazolyl N-oxide,
isoxazolyl N-oxide,

oxazolyl N-oxide,
 thiazolyl N-oxide,
 indoliziny N-oxide,
 indazolyl N-oxide,
 5 benzothiazolyl N-oxide,
 benzimidazolyl N-oxide,
 pyrrolyl N-oxide,
 oxadiazolyl N-oxide,
 thiadiazolyl N-oxide,
 10 triazolyl N-oxide,
 tetrazolyl N-oxide,
 benzothiopyranyl S-oxide, and
 benzothiopyranyl S,S-dioxide

where the $R_{N\text{-heteroaryl}}$ group is bonded by any atom of the parent R_N -
 15 heteroaryl group substituted by hydrogen such that the new bond to the $R_{N\text{-heteroaryl}}$ group
 replaces the hydrogen atom and its bond, where heteroaryl is optionally substituted with
 one, two, three, or four of:

(1) C_1 - C_6 alkyl, optionally substituted with one, two or
 three substituents selected from the group consisting of C_1 - C_3 alkyl, -F, -Cl, -Br, -I,
 20 -OH, -SH, $-C\equiv N$, $-CF_3$, C_1 - C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined
 above,

(2) -OH,
 (3) $-NO_2$,
 (4) -F, -Cl, -Br, or -I,
 25 (5) -CO-OH,
 (6) $-C\equiv N$,
 (7) $-(CH_2)_{0-4}-CO-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the
 same or different and are selected from the group consisting of:

(a) -H,
 30 (b) $-C_1$ - C_6 alkyl optionally substituted with one
 substituent selected from the group consisting of:

(i) -OH, and
 (ii) $-NH_2$,

(c) -C₁-C₆ alkyl optionally substituted with one,
two, or three -F, -Cl, -Br, -I,

(d) -C₃-C₇ cycloalkyl,

(e) -(C₁-C₂ alkyl)-(C₃-C₇ cycloalkyl),

5

(f) -(C₁-C₆ alkyl)-O-(C₁-C₃ alkyl),

(g) -C₂-C₆ alkenyl with one or two double bonds,

(h) -C₂-C₆ alkynyl with one or two triple bonds,

triple bond,

10

(j) -R_{1-aryl} where R_{1-aryl} is as defined above,

(k) -R_{1-heteroaryl} where R_{1-heteroaryl} is as defined above,

(8) -(CH₂)₀₋₄-CO-(C₁-C₁₂ alkyl),

(9) -(CH₂)₀₋₄-CO-(C₂-C₁₂ alkenyl with one, two or three

double bonds),

15

(10) -(CH₂)₀₋₄-CO-(C₂-C₁₂ alkynyl with one, two or three

triple bonds),

(11) -(CH₂)₀₋₄-CO-(C₃-C₇ cycloalkyl),

(12) -(CH₂)₀₋₄-CO-R_{1-aryl} where R_{1-aryl} is as defined above,

(13) -(CH₂)₀₋₄-CO-R_{1-heteroaryl} where R_{1-heteroaryl} is as defined

20 above,

(14) -(CH₂)₀₋₄-CO-R_{1-heterocycle} where R_{1-heterocycle} is as

defined above,

(15) -(CH₂)₀₋₄-CO-R_{N-4} where R_{N-4} is selected from the

group consisting of morpholinyl, thiomorpholinyl, piperazinyl, piperidinyl,

25 homomorpholinyl, homothiomorpholinyl, homothiomorpholinyl S-oxide,

homothiomorpholinyl S,S-dioxide, pyrrolinyl and pyrrolidinyl where each group is

optionally substituted with one, two, three, or four of C₁-C₆ alkyl,

(16) -(CH₂)₀₋₄-CO-O-R_{N-5} where R_{N-5} is selected from the

group consisting of:

30

(a) C₁-C₆ alkyl,

(b) -(CH₂)₀₋₂-(R_{1-aryl}) where R_{1-aryl} is as defined

above,

(c) C₂-C₆ alkenyl containing one or two double

bonds,

(d) C₂-C₆ alkynyl containing one or two triple bonds,

(e) C₃-C₇ cycloalkyl, and

(f) -(CH₂)₀₋₂-(R_{1-heteroaryl}) where R_{1-heteroaryl} is as defined above,

(17) -(CH₂)₀₋₄-SO₂-NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are as defined above,

(18) -(CH₂)₀₋₄-SO-(C₁-C₈ alkyl),

(19) -(CH₂)₀₋₄-SO₂-(C₁-C₁₂ alkyl),

(20) -(CH₂)₀₋₄-SO₂-(C₃-C₇ cycloalkyl),

(21) -(CH₂)₀₋₄-N(H or R_{N-5})-CO-O-R_{N-5} where R_{N-5} can be the same or different and is as defined above,

(22) -(CH₂)₀₋₄-N(H or R_{N-5})-CO-N(R_{N-5})₂, where R_{N-5} can be the same or different and is as defined above,

(23) -(CH₂)₀₋₄-N-CS-N(R_{N-5})₂, where R_{N-5} can be the same or different and is as defined above,

(24) -(CH₂)₀₋₄-N(-H or R_{N-5})-CO-R_{N-2} where R_{N-5} and R_{N-2} can be the same or different and are as defined above,

(25) -(CH₂)₀₋₄-NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} can be the same or different and are as defined above,

(26) -(CH₂)₀₋₄-R_{N-4} where R_{N-4} is as defined above,

(27) -(CH₂)₀₋₄-O-CO-(C₁-C₆ alkyl),

(28) -(CH₂)₀₋₄-O-P(O)-(OR_{N-aryl-1})₂ where R_{N-aryl-1} is -H or C₁-C₄ alkyl,

(29) -(CH₂)₀₋₄-O-CO-N(R_{N-5})₂ where R_{N-5} is as defined above,

(30) -(CH₂)₀₋₄-O-CS-N(R_{N-5})₂ where R_{N-5} is as defined above,

(31) -(CH₂)₀₋₄-O-(R_{N-5})₂ where R_{N-5} is as defined above,

(32) -(CH₂)₀₋₄-O-(R_{N-5})₂-COOH where R_{N-5} is as defined above,

(33) -(CH₂)₀₋₄-S-(R_{N-5})₂ where R_{N-5} is as defined above,

(34) -(CH₂)₀₋₄-O-(C₁-C₆ alkyl optionally substituted with one, two, three, four, or five of -F),

(35) C₃-C₇ cycloalkyl,

(36) C₂-C₆ alkenyl with one or two double bonds optionally substituted with C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

5 (37) C₂-C₆ alkynyl with one or two triple bonds optionally substituted with C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(38) -(CH₂)₀₋₄-N(-H or R_{N-5})-SO₂-R_{N-2} where R_{N-5} and R_{N-2} can be the same or different and are as defined above, or

10 (39) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl,

(C) R_{N-aryl}-W-R_{N-aryl}, where R_{N-aryl} can be the same or different,

(D) R_{N-aryl}-W-R_{N-heteroaryl},

(E) R_{N-aryl}-W-R_{N-1-heterocycle}, wherein R_{N-1-heterocycle} is the same as R_{1-heterocycle}, and R_{1-heterocycle} is as defined above

15 (F) R_{N-heteroaryl}-W-R_{N-aryl},

(G) R_{N-heteroaryl}-W-R_{N-heteroaryl},

(H) R_{N-heteroaryl}-W-R_{N-1-heterocycle},

(I) R_{N-heterocycle}-W-R_{N-aryl}, wherein R_{N-heterocycle} is the same as R_{1-heterocycle}, and R_{1-heterocycle} is as defined above, and R_{N-aryl} is as defined above,

20 (J) R_{N-heterocycle}-W-R_{N-heteroaryl}, and

(K) R_{N-heterocycle}-W-R_{N-1-heterocycle},

where W is

(5) -(CH₂)₀₋₄-,

(6) -O-,

25 (7) -S(O)₀₋₂-,

(8) -N(R_{N-5})- where R_{N-5} is as defined above, or

(5) -CO-;

(II) -CO-(C₁-C₁₀ alkyl) where alkyl is optionally substituted with one three substituents selected from the group consisting of:

30 (A) -OH,

(B) -C₁-C₆ alkoxy,

(C) -C₁-C₆ thioalkoxy,

(D) -CO-O-R_{N-8} where R_{N-8} is -H, C₁-C₆ alkyl or -phenyl,

(E) $-\text{CO}-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(F) $-\text{CO}-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(G) $-\text{SO}_2-(\text{C}_1-\text{C}_8 \text{ alkyl})$,

5 (H) $-\text{SO}_2-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(I) $-\text{NH}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

(J) $-\text{NH}-\text{CO}-\text{O}-\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is as defined above,

10 (K) $-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(L) $-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(M) $-\text{O}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

(N) $-\text{O}-\text{CO}-\text{NR}_{\text{N-8}}\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ are the same or different and are as defined above,

15 (O) $-\text{O}-(\text{C}_1-\text{C}_5 \text{ alkyl})-\text{COOH}$,

(P) $-\text{O}-(\text{C}_1-\text{C}_6 \text{ alkyl})$ optionally substituted with one, two, or three of -F, -Cl, -Br, or -I),

(Q) $-\text{NH}-\text{SO}_2-(\text{C}_1-\text{C}_6 \text{ alkyl})$, and

(R) -F, or -Cl,

20 (III) $-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})-\text{O}-(\text{C}_1-\text{C}_6 \text{ alkyl})$ where alkyl is optionally substituted with one, two, or three substituents selected from the group consisting of:

(A) -OH,

(B) $-\text{C}_1-\text{C}_6$ alkoxy,

(C) $-\text{C}_1-\text{C}_6$ thioalkoxy,

25 (D) $-\text{CO}-\text{O}-\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is -H, C_1-C_6 alkyl or -phenyl,

(E) $-\text{CO}-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(F) $-\text{CO}-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(G) $-\text{SO}_2-(\text{C}_1-\text{C}_8 \text{ alkyl})$,

30 (H) $-\text{SO}_2-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(I) $-\text{NH}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

(J) $-\text{NH}-\text{CO}-\text{O}-\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is as defined above,

(K) $-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(L) $-R_{N-4}$ where R_{N-4} is as defined above,

(M) $-O-CO-(C_1-C_6 \text{ alkyl})$,

5 (N) $-O-CO-NR_{N-8}R_{N-8}$ where R_{N-8} are the same or different and are as defined above,

(O) $-O-(C_1-C_5 \text{ alkyl})-COOH$,

(P) $-O-(C_1-C_6 \text{ alkyl})$ optionally substituted with one, two, or three of -F, -Cl, -Br, or -I),

10 (Q) $-NH-SO_2-(C_1-C_6 \text{ alkyl})$, and

(R) -F, or -Cl,

(IV) $-CO-(C_1-C_6 \text{ alkyl})-S-(C_1-C_6 \text{ alkyl})$ where alkyl is optionally substituted with one, two, or three of substituents selected from the group consisting of:

(A) -OH,

15 (B) $-C_1-C_6 \text{ alkoxy}$,

(C) $-C_1-C_6 \text{ thioalkoxy}$,

(D) $-CO-O-R_{N-8}$ where R_{N-8} is as defined above,

(E) $-CO-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

20 (F) $-CO-R_{N-4}$ where R_{N-4} is as defined above,

(G) $-SO_2-(C_1-C_8 \text{ alkyl})$,

(H) $-SO_2-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(I) $-NH-CO-(C_1-C_6 \text{ alkyl})$,

25 (J) $-NH-CO-O-R_{N-8}$ where R_{N-8} is as defined above,

(K) $-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(L) $-R_{N-4}$ where R_{N-4} is as defined above,

(M) $-O-CO-(C_1-C_6 \text{ alkyl})$,

30 (N) $-O-CO-NR_{N-8}R_{N-8}$ where R_{N-8} are the same or different and are as defined above,

(O) $-O-(C_1-C_5 \text{ alkyl})-COOH$,

(P) $-O-(C_1-C_6 \text{ alkyl optionally substituted with one, two, or three of } -F, -Cl, -Br, \text{ or } -I),$

(Q) $-NH-SO_2-(C_1-C_6 \text{ alkyl}),$ and

(R) $-F, \text{ or } -Cl,$

5 (V) $-CO-CH(-(CH_2)_{0-2}-O-R_{N-10})-(CH_2)_{0-2}-R_{N-aryl}/R_{N-heteroaryl})$ where R_{N-aryl} and $R_{N-heteroaryl}$ are as defined above, where R_{N-10} is selected from the group consisting of:

(A) $-H,$

(B) $C_1-C_6 \text{ alkyl},$

(C) $C_3-C_7 \text{ cycloalkyl},$

10 (D) $C_2-C_6 \text{ alkenyl with one double bond},$

(E) $C_2-C_6 \text{ alkynyl with one triple bond},$

(F) R_{1-aryl} where R_{1-aryl} is as defined above, and

(G) $R_{N-heteroaryl}$ where $R_{N-heteroaryl}$ is as defined above, or

(VI) $-CO-(C_3-C_8 \text{ cycloalkyl})$ where alkyl is optionally substituted with one
15 or two substituents selected from the group consisting of:

(A) $-(CH_2)_{0-4}-OH,$

(B) $-(CH_2)_{0-4}-C_1-C_6 \text{ alkoxy},$

(C) $-(CH_2)_{0-4}-C_1-C_6 \text{ thioalkoxy},$

(D) $-(CH_2)_{0-4}-CO-O-R_{N-8}$ where R_{N-8} is $-H, C_1-C_6 \text{ alkyl or phenyl},$

20 (E) $-(CH_2)_{0-4}-CO-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(F) $-(CH_2)_{0-4}-CO-R_{N-4}$ where R_{N-4} is as defined above,

(G) $-(CH_2)_{0-4}-SO_2-(C_1-C_8 \text{ alkyl}),$

(H) $-(CH_2)_{0-4}-SO_2-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or
25 different and are as defined above,

(I) $-(CH_2)_{0-4}-NH-CO-(C_1-C_6 \text{ alkyl}),$

(J) $-NH-CO-O-R_{N-8}$ where R_{N-8} is as defined above,

(K) $-(CH_2)_{0-4}-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or
different and are as defined above,

30 (L) $-(CH_2)_{0-4}-R_{N-4}$ where R_{N-4} is as defined above,

(M) $-O-CO-(C_1-C_6 \text{ alkyl}),$

(N) -O-CO-NR_{N-8}R_{N-8} where R_{N-8} are the same or different and are as defined above,

(O) -O-(C₁-C₅ alkyl)-COOH,

(P) -O-(C₁-C₆ alkyl optionally substituted with one, two, or three of
5 -F, -Cl, -Br, or -I),

(Q) -NH-SO₂-(C₁-C₆ alkyl), and

(R) -F, or -Cl;

where R_A is:

10 (I) -C₁-C₁₀ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, -OC=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, -S(=O)₀₋₂ R_{1-a} where R_{1-a} is as defined above, -NR_{1-a}C=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, -
15 C=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, and -S(=O)₂ NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(II) -(CH₂)₀₋₃-(C₃-C₈) cycloalkyl where cycloalkyl can be optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkCyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -CO-OH, -CO-
20 O-(C₁-C₄ alkyl), and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(III) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-aryl} where R_{A-x} and R_{A-y} are

(A) -H,

(B) C₁-C₄ alkyl optionally substituted with one or two -OH,

(C) C₁-C₄ alkoxy optionally substituted with one, two, or three of -
25 F,

(D) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl,

(E) C₂-C₆ alkenyl containing one or two double bonds,

(F) C₂-C₆ alkynyl containing one or two triple bonds, or

(G) phenyl,

30 and where R_{A-x} and R_{A-y} are taken together with the carbon to which they are attached to form a carbocycle of three, four, five, six or seven carbon atoms, optionally where one carbon atom is replaced by a heteroatom selected from the group consisting of -O-, -S-, -SO₂-, and -NR_{N-2}- and R_{A-aryl} is the same as R_{N-aryl},

(IV) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}}$ where $\text{R}_{\text{A-heteroaryl}}$ is the same as $\text{R}_{\text{N-heteroaryl}}$ and $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(V) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-aryl}}-\text{R}_{\text{A-aryl}}$ where $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

5 (VI) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-aryl}}-\text{R}_{\text{A-heteroaryl}}$ where $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(VII) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}}-\text{R}_{\text{A-aryl}}$ where $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

10 (VIII) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}}-\text{R}_{\text{A-heteroaryl}}$ where $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(IX) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-aryl}}-\text{R}_{\text{A-heterocycle}}$ where $\text{R}_{\text{A-heterocycle}}$ is defined as $\text{R}_{\text{L-heterocycle}}$, and where $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(X) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}}-\text{R}_{\text{A-heterocycle}}$ where $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

15 (XI) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}}-\text{R}_{\text{A-aryl}}$ where $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(XII) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}}-\text{R}_{\text{A-heteroaryl}}$ where $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

20 (XIII) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}}-\text{R}_{\text{A-heterocycle}}$ where $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(XIV) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}}$ where $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(XV) $-\text{[C(R}_{\text{A-1}})(\text{R}_{\text{A-2}})]_{1-3}-\text{CO-N-(R}_{\text{A-3}})_2$ where $\text{R}_{\text{A-1}}$ and $\text{R}_{\text{A-2}}$ are the same or different and are selected from the group consisting of:

25 (A) -H,

(B) $-\text{C}_1-\text{C}_6$ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_6 alkoxy, -O-phenyl, and $-\text{NR}_{1-\text{a}}\text{R}_{1-\text{b}}$ where $\text{R}_{1-\text{a}}$ and $\text{R}_{1-\text{b}}$ are as defined above,

30 (C) C_2-C_6 alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_6 alkoxy, -O-phenyl, and $-\text{NR}_{1-\text{a}}\text{R}_{1-\text{b}}$ where $\text{R}_{1-\text{a}}$ and $\text{R}_{1-\text{b}}$ are as defined above,

(D) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

5 (E) -(CH₂)₁₋₂-S(O)₀₋₂-(C₁-C₆ alkyl),

(F) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

10 (G) -(C₁-C₄ alkyl)-R_{A'-aryl} where R_{A'-aryl} is as defined for R_{1-aryl},

(H) -(C₁-C₄ alkyl)-R_{A-heteroaryl} where R_{A-heteroaryl} is as defined above,

(I) -(C₁-C₄ alkyl)-R_{A-heterocycle} where R_{A-heterocycle} is as defined above,

(J) -R_{A-heteroaryl} where R_{A-heteroaryl} is as defined above,

(K) -R_{A-heterocycle} where R_{A-heterocycle} is as defined above,

15 (M) -(CH₂)₁₋₄-R_{A-4}-(CH₂)₀₋₄-R_{A'-aryl} where R_{A-4} is -O-, -S- or -NR_{A-5}- where R_{A-5} is C₁-C₆ alkyl, and where R_{A'-aryl} is defined above,

(N) -(CH₂)₁₋₄-R_{A-4}-(CH₂)₀₋₄-R_{A-heteroaryl} where R_{A-4} and R_{A-heteroaryl} are as defined above, and

(O) -R_{A'-aryl} where R_{A'-aryl} is as defined above,

20 and where R_{A-3} is the same or different and is:

(A) -H,

(B) -C₁-C₆ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined
25 above,

(C) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

30 (D) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(E) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above.

5 (F) $-\text{R}_{\text{A}'\text{-aryl}}$ where $\text{R}_{\text{A}'\text{-aryl}}$ is as defined above,

(G) -R_{A-heteroaryl} where R_{A-heteroaryl} is as defined above,

(H) $-R_{A\text{-heterocycle}}$ where $R_{A\text{-heterocycle}}$ is as defined above.

(I) $-(C_1-C_4 \text{ alkyl})-R_{A'-\text{aryl}}$ where $R_{A'-\text{aryl}}$ is as defined above,

(J) $-(C_1-C_4 \text{ alkyl})-R_{A\text{-heteroaryl}}$ where $R_{A\text{-heteroaryl}}$ is as defined above,

10 (K) -(C₁-C₄ alkyl)-R_{A-heterocycle} where R_{A-heterocycle} is as defined
above, or

(XVI) $-\text{CH}(\text{R}_{\text{A-aryl}})_2$ where $\text{R}_{\text{A-aryl}}$ are the same or different and are as defined above.

(XVII) $-\text{CH}(\text{R}_{\text{A-heteroaryl}})_2$ where $\text{R}_{\text{A-heteroaryl}}$ are the same or different and are
15 as defined above.

(XVIII) $-\text{CH}(\text{R}_{\text{A-aryl}})(\text{R}_{\text{A-heteroaryl}})$ where $\text{R}_{\text{A-aryl}}$ and $\text{R}_{\text{A-heteroaryl}}$ are as defined above,

(XIX) -cyclopentyl, -cyclohexyl, or -cycloheptyl ring fused to R_{A-aryl}, R_{A-heteroaryl}, R_{A-heterocycle} where R_{A-aryl} or R_{A-heteroaryl} or R_{A-heterocycle} are as defined above where one carbon of cyclopentyl, cyclohexyl, or -cycloheptyl is optionally replaced with NH, NR_{N-5}, O, or S(=O)₀₋₂, and where cyclopentyl, cyclohexyl, or -cycloheptyl can be optionally substituted with one or two -C₁-C₃ alkyl, -F, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, =O, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(XX) C₂-C₁₀ alkenyl containing one or two double bonds optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above.

(XXI) C₂-C₁₀ alkynyl containing one or two triple bonds optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(XXI) $-(CH_2)_{0-1}-CHR_{A-6}-(CH_2)_{0-1}-R_{A-aryl}$ where R_{A-aryl} is as defined above and R_{A-6} is $-(CH_2)_{0-6}-OH$.

(XXII) $-(CH_2)_{0-1}-CHR_{A-6}-(CH_2)_{0-1}-R_{A-heteroaryl}$ where $R_{A-heteroaryl}$ and R_{A-6} is as defined above,

(XXIII) $-CH(-R_{A-aryl} \text{ or } R_{A-heteroaryl})-CO-O(C_1-C_4 \text{ alkyl})$ where R_{A-aryl} and $R_{A-heteroaryl}$ are as defined above,

5 (XXIV) $-CH(-CH_2-OH)-CH(-OH)-micro-NO_2$,

(XXV) $(C_1-C_6 \text{ alkyl})-O-(C_1-C_6 \text{ alkyl})-OH$,

(XXVII) $-CH_2-NH-CH_2-CH(-O-CH_2-CH_3)_2$,

(XXVIII) $-H$,

10 (XXIX) $-(CH_2)_{0-6}-C(=NR_{1-a})(NR_{1-a}R_{1-b})$ where R_{1-a} and R_{1-b} are as defined above; or

(XXX)

$-C=OC(HR_6)NHR_7$, where R_6 and R_7 are as defined below,

$-C=OR_7$, where R_7 is as defined below,

15 $-C=OOR_7$, where R_7 is as defined below, or

$-SOOR_7$ where R_7 is as defined below,

wherein R_6 is:

hydrogen,

$C_1 - C_3$ alkyl,

phenyl,

20 thioalkoxyalkyl,

alkyl substituted aryl,

cycloalkyl,

cycloalkylalkyl,

hydroxyalkyl,

25 alkoxyalkyl,

aryloxyalkyl,

haloalkyl,

carboxyalkyl,

alkoxycarbonylalkyl,

30 aminoalkyl,

(N-protected)aminoalkyl,

alkylaminoalkyl,

((N-protected)(alkyl)amino)alkyl,

dialkylaminoalkyl,

5
 10
 15
 20
 25
 30

guanidinoalkyl,
 lower alkenyl,
 heterocyclic,
 (heterocyclic)alkyl),
 arylthioalkyl,
 arylsulfonylalkyl,
 (heterocyclic)thioalkyl,
 (heterocyclic)sulfonylalkyl,
 (heterocyclic)oxyalkyl,
 arylalkoxyalkyl,
 arylthioalkoxyalkyl,
 arylalkylsulfonylalkyl,
 (heterocyclic))alkoxyalkyl,
 (heterocyclic)thioalkoxyalkyl,
 (heterocyclic)alkylsulfonylalkyl,
 cycloalkyloxyalkyl,
 cycloalkylthioalkyl,
 cycloalkylsulfonylalkyl,
 cycloalkylalkoxyalkyl,
 cycloalkylthioalkoxyalkyl,
 cycloalkylalkylsulfonylalkyl,
 aminocarbonyl,
 alkylaminocarbonyl,
 dialkylaminocarbonyl,
 aroylalkyl,
 (heterocyclic)carbonylalkyl,
 polyhydroxyalkyl,
 aminocarbonylalkyl,
 alkylaminocarbonylalkyl,
 dialkylaminocarbonylalkyl,
 aryloxyalkyl, or
 alkylsulfonylalkyl,

wherein heterocyclic is pyridyl, thiazolyl, isothiazolyl,
 oxazolyl, isoxazolyl, furanyl, thienyl, tetrahydrofuranyl, tetrahydrothienyl and

tetrahydro[2H]pyranyl and wherein the heterocycle is unsubstituted or substituted with one to three substituents independently selected from hydroxy, halo, amino, alkylamino, dialkylamino, alkoxy, polyalkoxy, haloalkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, COOH, -SO₃H, lower alkenyl or lower alkyl;

5

wherein R₇ is:C₁ - C₃ alkyl,

phenyl,

thioalkoxyalkyl,

(aryl)alkyl,

10

cycloalkyl,

cycloalkylalkyl,

hydroxyalkyl,

alkoxyalkyl,

aryloxyalkyl,

15

haloalkyl,

carboxyalkyl,

alkoxycarbonylalkyl,

aminoalkyl,

(N-protected)aminocalkyl,

20

alkylaminoalkyl,

((N-protected)(alkyl)amino)alkyl,

dialkylaminoalkyl,

guanidinoalkyl,

lower alkenyl,

25

heterocyclic,

(heterocyclic)alkyl),

arylthioalkyl,

arylsulfonyalkyl,

(heterocyclic)thioalkyl,

30

(heterocyclic)sulfonylalkyl,

(heterocyclic)oxyalkyl,

arylalkoxyalkyl,

arylthioalkoxyalkyl,

arylalkylsulfonylalkyl,

(heterocyclic))alkoxyalkyl,
 (heterocyclic)thioalkoxyalkyl,
 (heterocyclic)alkylsulfonylalkyl,
 cycloalkyloxyalkyl,
 5 cycloalkylthioalkyl,
 cycloalkylsulfonylalkyl,
 cycloalkylalkoxyalkyl,
 cycloalkylthioalkoxyalkyl,
 cycloalkylalkylsulfonylalkyl,
 10 aminocarbonyl,
 alkylaminocarbonyl,
 dialkylaminocarbonyl,
 aroylalkyl,
 (heterocyclic)carbonylalkyl,
 15 polyhydroxyalkyl,
 aminocarbonylalkyl,
 alkylaminocarbonylalkyl,
 dialkylaminocarbonylalkyl,
 aryloxyalkyl, or
 20 alkylsulfonylalkyl,
 wherein heterocyclic is pyridyl, thiazolyl, isothiazolyl,
 oxazolyl, isoxazolyl, furanyl, thienyl, tetrahydrofuranyl, tetrahydrothienyl and
 tetrahydro[2H]pyranyl and wherein the heterocycle is unsubstituted or substituted with
 one to three substituents independently selected from hydroxy, halo, amino, alkylamino,
 25 dialkylamino, alkoxy, polyalkoxy, haloalkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl,
 COOH, -SO₃H, lower alkenyl or lower alkyl;

where R_B is:

(I)-C₁-C₁₀ alkyl optionally substituted with one, two or three substituents
 30 selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH,
 -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined
 above, -OC=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, -S(=O)₀₋₂ R_{1-a} where
 R_{1-a} is as defined above, -NR_{1-a}C=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, -

$C=O NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above, and $-S(=O)_2 NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(II) $-(CH_2)_{0-3}-(C_3-C_8)$ cycloalkyl where cycloalkyl can be optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, $-CO-OH$, $-CO-O$ -
 5 $(C_1-C_4$ alkyl), and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(III) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-aryl}$ where R_{B-x} and R_{B-y} are

(A) $-H$,
 (B) C_1-C_4 alkyl optionally substituted with one or two $-OH$,
 10 (C) C_1-C_4 alkoxy optionally substituted with one, two, or three of $-F$,

(D) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl,
 (E) C_2-C_6 alkenyl containing one or two double bonds,
 (F) C_2-C_6 alkynyl containing one or two triple bonds, or
 15 (G) phenyl,

and where R_{B-x} and R_{B-y} are taken together with the carbon to which they are attached to form a carbocycle of three, four, five, six or seven carbon atoms, optionally where one carbon atom is replaced by a heteroatom selected from the group consisting of $-O-$, $-S-$, $-SO_2-$, and $-NR_{N-2}$ where R_{N-2} is as defined above, and R_{B-aryl}
 20 is the same as R_{N-aryl} and is defined above

(IV) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heteroaryl}$ where $R_{B-heteroaryl}$ is the same as $R_{N-heteroaryl}$, R_{B-x} , and R_{B-y} are as defined above,

(V) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-aryl}-R_{B-aryl}$ where R_{B-aryl} , R_{B-x} , and R_{B-y} are as defined above,

25 (VI) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-aryl}-R_{B-heteroaryl}$ where R_{B-aryl} , $R_{B-heteroaryl}$, R_{B-x} and R_{B-y} are as defined above,

(VII) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heteroaryl}-R_{B-aryl}$ where $R_{B-heteroaryl}$, R_{B-aryl} , R_{B-x} and R_{B-y} are as defined above,

(VIII) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heteroaryl}-R_{B-heteroaryl}$ where $R_{B-heteroaryl}$, R_{B-x} and R_{B-y}
 30 are as defined above,

(IX) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-aryl}-R_{B-heterocycle}$ where $R_{B-heterocycle}$ is defined as $R_{1-heterocycle}$, and where R_{B-aryl} , R_{B-x} and R_{B-y} are as defined above,

(X) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heteroaryl}}-\text{R}_{\text{B-heterocycle}}$ where $\text{R}_{\text{B-heteroaryl}}$, $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

(XI) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heterocycle}}-\text{R}_{\text{B-aryl}}$ where $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-aryl}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

5 (XII) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heterocycle}}-\text{R}_{\text{B-heteroaryl}}$ where $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-heteroaryl}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

(XIII) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heterocycle}}-\text{R}_{\text{B-heterocycle}}$ where $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

10 (XIV) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heterocycle}}$ where $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

(XV) $-[\text{C}(\text{R}_{\text{B-1}})(\text{R}_{\text{B-2}})]_{1-3}-\text{CO}-\text{N}-(\text{R}_{\text{B-3}})_2$ where $\text{R}_{\text{B-1}}$ and $\text{R}_{\text{B-2}}$ are the same or different and are selected from the group consisting of:

(A) -H,

15 (B) $\text{C}_1\text{-C}_6$ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $\text{-NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

20 (C) $\text{C}_2\text{-C}_6$ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $\text{-NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

25 (D) $\text{C}_2\text{-C}_6$ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $\text{-NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(E) $-(\text{CH}_2)_{1-2}-\text{S}(\text{O})_{0-2}-(\text{C}_1\text{-C}_6 \text{ alkyl})$,

30 (F) $-(\text{CH}_2)_{0-4}-\text{C}_3\text{-C}_7$ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $\text{-NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(G) $-(\text{C}_1\text{-C}_4 \text{ alkyl})-\text{R}_{\text{B'-aryl}}$ where $\text{R}_{\text{B'-aryl}}$ is as defined above for R_{1-}

aryl,

(H) $-(\text{C}_1\text{-C}_4 \text{ alkyl})-\text{R}_{\text{B-heteroaryl}}$ where $\text{R}_{\text{B-heteroaryl}}$ is as defined above,

- (I) $-(C_1-C_4 \text{ alkyl})-R_{B\text{-heterocycle}}$ where $R_{B\text{-heterocycle}}$ is as defined above,
 (J) $-R_{B\text{-heteroaryl}}$ where $R_{B\text{-heteroaryl}}$ is as defined above,
 (K) $-R_{B\text{-heterocycle}}$ where $R_{B\text{-heterocycle}}$ is as defined above,
 (M) $-(CH_2)_{1-4}-R_{B-4}-(CH_2)_{0-4}-R_{B'\text{-aryl}}$ where R_{B-4} is $-O-$, $-S-$ or
 5 $-NR_{B-5}-$ where R_{B-5} is C_1-C_6 alkyl, and where $R_{B'\text{-aryl}}$ is defined above,
 (N) $-(CH_2)_{1-4}-R_{B-4}-(CH_2)_{0-4}-R_{B\text{-heteroaryl}}$ where R_{B-4} and $R_{B\text{-heteroaryl}}$
 are as defined above, and
 (O) $-R_{B'\text{-aryl}}$ where $R_{B'\text{-aryl}}$ is as defined above,
 and where R_{B-3} is the same or different and is:
 10 (A) $-H$,
 (B) $-C_1-C_6$ alkyl optionally substituted with one, two or three
 substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$,
 $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as
 defined above,
 15 (C) C_2-C_6 alkenyl with one or two double bonds, optionally
 substituted with one, two or three substituents selected from the group consisting of C_1-C_3
 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$
 where R_{1-a} and R_{1-b} are as defined above,
 (D) C_2-C_6 alkynyl with one or two triple bonds, optionally
 20 substituted with one, two or three substituents selected from the group consisting of C_1-C_3
 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$
 where R_{1-a} and R_{1-b} are as defined above,
 (E) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl, optionally substituted with one,
 two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-$
 25 I , $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are
 as defined above,
 (F) $-R_{B'\text{-aryl}}$ where $R_{B'\text{-aryl}}$ is as defined above,
 (G) $-R_{B\text{-heteroaryl}}$ where $R_{B\text{-heteroaryl}}$ is as defined above,
 (H) $-R_{B\text{-heterocycle}}$ where $R_{B\text{-heterocycle}}$ is as defined above,
 30 (I) $-(C_1-C_4 \text{ alkyl})-R_{B'\text{-aryl}}$ where $R_{B'\text{-aryl}}$ is as defined above,
 (J) $-(C_1-C_4 \text{ alkyl})-R_{B\text{-heteroaryl}}$ where $R_{B\text{-heteroaryl}}$ is as defined above,
 (K) $-(C_1-C_4 \text{ alkyl})-R_{B\text{-heterocycle}}$ where $R_{B\text{-heterocycle}}$ is as defined
 above, or

(XVI) $-\text{CH}(\text{R}_{\text{B-aryl}})_2$ where $\text{R}_{\text{B-aryl}}$ are the same or different and are as defined above,

(XVII) $-\text{CH}(\text{R}_{\text{B-heteroaryl}})_2$ where $\text{R}_{\text{B-heteroaryl}}$ are the same or different and are as defined above,

5 (XVIII) $-\text{CH}(\text{R}_{\text{B-aryl}})(\text{R}_{\text{B-heteroaryl}})$ where $\text{R}_{\text{B-aryl}}$ and $\text{R}_{\text{B-heteroaryl}}$ are as defined above,

(XIX) -cyclopentyl, -cyclohexyl, or -cycloheptyl ring fused to $\text{R}_{\text{B-aryl}}$ or $\text{R}_{\text{B-heteroaryl}}$ or $\text{R}_{\text{B-heterocycle}}$ where $\text{R}_{\text{B-aryl}}$ or $\text{R}_{\text{B-heteroaryl}}$ or $\text{R}_{\text{B-heterocycle}}$ are as defined above where one carbon of cyclopentyl, cyclohexyl, or -cycloheptyl is optionally replaced with NH ,
 10 $\text{NR}_{\text{N-5}}$, O, or $\text{S}(=\text{O})_{0-2}$, and where cyclopentyl, cyclohexyl, or -cycloheptyl can be optionally substituted with one or two $-\text{C}_1-\text{C}_3$ alkyl, $-\text{F}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_6 alkoxy, $=\text{O}$, or $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(XX) C_2-C_{10} alkenyl containing one or two double bonds optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3
 15 alkyl, $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_6 alkoxy, $-\text{O-phenyl}$, and $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(XXI) C_2-C_{10} alkynyl containing one or two triple bonds optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3
 20 alkyl, $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_6 alkoxy, $-\text{O-phenyl}$, and $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(XXI) $-(\text{CH}_2)_{0-1}-\text{CHR}_{\text{C-6}}-(\text{CH}_2)_{0-1}-\text{R}_{\text{B-aryl}}$ where $\text{R}_{\text{B-aryl}}$ is as defined above and $\text{R}_{\text{C-6}}$ is $-(\text{CH}_2)_{0-6}-\text{OH}$,

(XXII) $-(\text{CH}_2)_{0-1}-\text{CHR}_{\text{B-6}}-(\text{CH}_2)_{0-1}-\text{R}_{\text{B-heteroaryl}}$ where $\text{R}_{\text{B-heteroaryl}}$ and $\text{R}_{\text{C-6}}$ is as defined above,

25 (XXIII) $-\text{CH}(-\text{R}_{\text{B-aryl}} \text{ or } \text{R}_{\text{B-heteroaryl}})-\text{CO}-\text{O}(\text{C}_1-\text{C}_4 \text{ alkyl})$ where $\text{R}_{\text{B-aryl}}$ and $\text{R}_{\text{B-heteroaryl}}$ are as defined above,

(XXIV) $-\text{CH}(-\text{CH}_2-\text{OH})-\text{CH}(-\text{OH})-\text{micro-NO}_2$,

(XXV) $(\text{C}_1-\text{C}_6 \text{ alkyl})-\text{O}-(\text{C}_1-\text{C}_6 \text{ alkyl})-\text{OH}$,

(XXVII) $-\text{CH}_2-\text{NH}-\text{CH}_2-\text{CH}(-\text{O}-\text{CH}_2-\text{CH}_3)_2$,

30 (XXVIII) $-\text{H}$, or

(XXIX) $-(\text{CH}_2)_{0-6}-\text{C}(=\text{NR}_{1-a})(\text{NR}_{1-a}\text{R}_{1-b})$ where R_{1-a} and R_{1-b} are as defined above; and

where PROTECTING GROUP is selected from the group consisting of *t*-butoxycarbonyl, benzyloxycarbonyl, formyl, trityl, acetyl, trichloroacetyl, dichloroacetyl, chloroacetyl, trifluoroacetyl, difluoroacetyl, fluoroacetyl, 4-phenylbenzyloxycarbonyl, 2-methylbenzyloxycarbonyl, 4-ethoxybenzyloxycarbonyl, 4-fluorobenzyloxycarbonyl, 4-chlorobenzyloxycarbonyl, 3-chlorobenzyloxycarbonyl, 2-chlorobenzyloxycarbonyl, 2,4-dichlorobenzyloxycarbonyl, 4-bromobenzyloxycarbonyl, 3-bromobenzyloxycarbonyl, 4-nitrobenzyloxycarbonyl, 4-cyanobenzyloxycarbonyl, 2-(4-xenyl)isopropoxycarbonyl, 1,1-diphenyleth-1-yloxycarbonyl, 1,1-diphenylprop-1-yloxycarbonyl, 2-phenylprop-2-yloxycarbonyl, 2-(*p*-toluyl)prop-2-yloxycarbonyl, cyclopentanyloxycarbonyl, 1-methylcyclopentanyloxycarbonyl, cyclohexanyloxycarbonyl, 1-methylcyclohexanyloxycarbonyl, 2-methylcyclohexanyloxycarbonyl, 2-(4-toluylsulfonyl)ethoxycarbonyl, 2-(methylsulfonyl)ethoxycarbonyl, 2-(triphenylphosphino)ethoxycarbonyl, fluorenylmethoxycarbonyl, 2-(trimethylsilyl)ethoxycarbonyl, allyloxycarbonyl, 1-(trimethylsilylmethyl)prop-1-enyloxycarbonyl, 5-benzisoxalylmethoxycarbonyl, 4-acetoxybenzyloxycarbonyl, 2,2,2-trichloroethoxycarbonyl, 2-ethynyl-2-propoxycarbonyl, cyclopropylmethoxycarbonyl, 4-(decyloxyl)benzyloxycarbonyl, isobornyloxycarbonyl and 1-piperidyloxycarbonyl, 9-fluorenylmethyl carbonate, -CH-CH=CH₂ and phenyl-C(=N)-H.

32. A protected compound according to claim 31

where R₁ is:

-(CH₂)₀₋₁-(R_{1-aryl}), or

-(CH₂)_{n1}-(R_{1-heteroaryl});

where R_N is:

R_{N-1}-X_N-, where X_N is selected from the group consisting of:

-CO-, and

-SO₂-,

where R_{N-1} is selected from the group consisting of:

-R_{N-aryl}, and

-R_{N-heteroaryl}, or

-CO-CH(-(CH₂)₀₋₂-O-R_{N-10})-(CH₂)₀₋₂-R_{N-aryl}/R_{N-heteroaryl});

where R_A is:

-C₁-C₈ alkyl,

-(CH₂)₀₋₃-(C₃-C₇) cycloalkyl,

$-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-aryl}}$,
 $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}}$,
 $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}}$,
 -cyclopentyl or -cyclohexyl ring fused to $\text{R}_{\text{A-aryl}}$ or $\text{R}_{\text{A-heteroaryl}}$ or $\text{R}_{\text{A-}}$

5 heterocycle;

where R_{B} is:

$-\text{C}_1-\text{C}_8$ alkyl,
 $-(\text{CH}_2)_{0-3}-(\text{C}_3-\text{C}_7)$ cycloalkyl,
 $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-aryl}}$,
 $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}}$,
 $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}}$,
 -cyclopentyl or -cyclohexyl ring fused to $\text{R}_{\text{A-aryl}}$ or $\text{R}_{\text{A-heteroaryl}}$ or $\text{R}_{\text{A-}}$

heterocycle.

15 33. A protected compound according to claim 34 ✓

where R_1 is:

$-(\text{CH}_2)-(\text{R}_1\text{-aryl})$, or
 $-(\text{CH}_2)-(\text{R}_1\text{-heteroaryl})$;

where R_2 is -H;

20 where R_3 is -H;

where R_{N} is:

$\text{R}_{\text{N-1}}-\text{X}_{\text{N}}$ where X_{N} is:

-CO-,

where $\text{R}_{\text{N-1}}$ is selected from the group consisting of:

25 - $\text{R}_{\text{N-aryl}}$, and

- $\text{R}_{\text{N-heteroaryl}}$;

where R_{A} is:

$-\text{C}_1-\text{C}_8$ alkyl,
 $-(\text{CH}_2)_{0-3}-(\text{C}_3-\text{C}_7)$ cycloalkyl,
 $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-aryl}}$,
 $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}}$,
 $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}}$, or
 -cyclopentyl or -cyclohexyl ring fused to $\text{R}_{\text{A-aryl}}$ or $\text{R}_{\text{A-heteroaryl}}$ or $\text{R}_{\text{A-}}$

heterocycle;

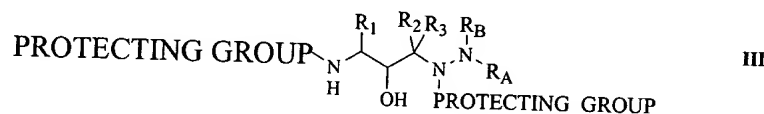
where R_B is:

- C₁-C₈ alkyl,
- (CH₂)₀₋₃-(C₃-C₇) cycloalkyl,
- (CR_{B-x}R_{B-y})₀₋₄-R_{B-aryl}, or
- 5 -(CR_{B-x}R_{B-y})₀₋₄-R_{B-heteroaryl}.
- (CR_{B-x}R_{B-y})₀₋₄-R_{B-heterocycle},
- cyclopentyl or -cyclohexyl ring fused to R_{B-aryl} or R_{B-heteroaryl} or R_{B-heterocycle}.

- 10 34. A protected compound according to claim 3A where PROTECTING GROUP is *t*-butoxycarbonyl.

35. A protected compound according to claim 3A where PROTECTING GROUP is benzyloxycarbonyl.

- 15 36. A protected compound of the formula (III)



- 20 where R_1 is:

- (I) C₁-C₆ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, C₁-C₇ alkyl (optionally substituted with C₁-C₃ alkyl and C₁-C₃ alkoxy), -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl, and -OC=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

- (II) -CH₂-S(O)₀₋₂-(C₁-C₆ alkyl),
- (III) -CH₂-CH₂-S(O)₀₋₂-(C₁-C₆ alkyl),
- (IV) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,
- 30

(V) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(VI) -(CH₂)_{n1}-(R_{1-aryl}) where n₁ is zero or one and where R_{1-aryl} is phenyl, 1-naphthyl, 2-naphthyl and indanyl, indenyl, dihydronaphthalyl, or tetralinyl optionally substituted with one, two, three or four of the following substituents on the aryl ring:

(A) C₁-C₆ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, and C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(B) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(C) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(D) -F, Cl, -Br or -I,

(F) -C₁-C₆ alkoxy optionally substituted with one, two or three of -F,

(G) -NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are as defined below,

(H) -OH,

(I) -C≡N,

(J) C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(K) -CO-(C₁-C₄ alkyl),

(L) -SO₂-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(M) -CO-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, or

(N) -SO₂-(C₁-C₄ alkyl),

(VII) -(CH₂)_{n1}-(R_{1-heteroaryl}) where n₁ is as defined above and where R_{1-heteroaryl} is selected from the group consisting of:

pyridinyl,

5 pyrimidinyl,
 quinolinyl,
 benzothienyl,
 indolyl,
 indolinyl,
 pyridazinyl,
 pyrazinyl,
 isoquinolyl,
10 quinazolinyl,
 quinoxalinyl,
 phthalazinyl,
 imidazolyl,
 isoxazolyl,
 pyrazolyl,
15 oxazolyl,
 thiazolyl,
 indolizinyll,
 indazolyl,
 benzothiazolyl,
20 benzimidazolyl,
 benzofuranyl,
 furanyl,
 thienyl,
 pyrrolyl,
25 oxadiazolyl,
 thiadiazolyl,
 triazolyl,
 tetrazolyl,
 oxazolopyridinyl,
30 imidazopyridinyl,
 isothiazolyl,
 naphthyridinyl,
 cinnolinyl,
 carbazolyl,

beta-carbolinyl,
isochromanyl,
chromanyl,
tetrahydroisoquinoliny,
5 isoindoliny,
isobenzotetrahydrofuranyl,
isobenzotetrahydrothienyl,
isobenzothieryl,
10 benzoxazolyl,
pyridopyridiny,
benzotetrahydrofuranyl,
benzotetrahydrothienyl,
puriny,
15 benzodioxolyl,
triaziny,
phenoxaziny,
phenothiaziny,
pteridiny,
20 benzothiazolyl,
imidazopyridiny,
imidazothiazolyl,
dihydrobenzisoxaziny,
benzisoxaziny,
25 benzoxaziny,
dihydrobenzisothiaziny,
benzopyranyl,
benzothiopyranyl,
coumariny,
30 isocoumariny,
chromony,
chromanony,
pyridiny-N-oxide,
tetrahydroquinoliny
dihydroquinoliny

5 dihydroquinolinonyl
dihydroisoquinolinonyl
dihydrocoumarinyl
dihydroisocoumarinyl
isoindolinonyl
benzodioxanyl
benzoxazolinonyl
pyrrolyl N-oxide,
pyrimidinyl N-oxide,
10 pyridazinyl N-oxide,
pyrazinyl N-oxide,
quinolinyl N-oxide,
indolyl N-oxide,
indolinyl N-oxide,
15 isoquinolyl N-oxide,
quinazolinyl N-oxide,
quinoxalinyl N-oxide,
phthalazinyl N-oxide,
imidazolyl N-oxide,
20 isoxazolyl N-oxide,
oxazolyl N-oxide,
thiazolyl N-oxide,
indolizinyll N-oxide,
indazolyl N-oxide,
25 benzothiazolyl N-oxide,
benzimidazolyl N-oxide,
pyrrolyl N-oxide,
oxadiazolyl N-oxide,
thiadiazolyl N-oxide,
30 triazolyl N-oxide,
tetrazolyl N-oxide,
benzothiopyranyl S-oxide, and
benzothiopyranyl S,S-dioxide,

where the $R_{1\text{-heteroaryl}}$ group is bonded to $-(CH_2)_{n1}-$ by any ring atom of the parent $R_{1\text{-heteroaryl}}$ group substituted by hydrogen such that the new bond to the $R_{1\text{-heteroaryl}}$ group replaces the hydrogen atom and its bond, where heteroaryl is optionally substituted with one, two, three or four of:

5 (1) C_1-C_6 alkyl optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(2) C_2-C_6 alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of $-F$, $-Cl$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are $-H$ or C_1-C_6 alkyl,

(3) C_2-C_6 alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of $-F$, $-Cl$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are $-H$ or C_1-C_6 alkyl,

(4) $-F$, $-Cl$, $-Br$ or $-I$,

(6) $-C_1-C_6$ alkoxy optionally substituted with one, two, or three of $-F$,

(7) $-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are as defined below,

(8) $-OH$,

(9) $-C\equiv N$,

(10) C_3-C_7 cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of $-F$, $-Cl$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are $-H$ or C_1-C_6 alkyl,

(11) $-CO-(C_1-C_4 \text{ alkyl})$,

(12) $-SO_2-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(13) $-CO-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above, or

(14) $-SO_2-(C_1-C_4 \text{ alkyl})$, with the proviso that when n_1 is zero $R_{1\text{-heteroaryl}}$ is not bonded to the carbon chain by nitrogen; or

(VIII) $-(CH_2)_{n1}-(R_{1\text{-heterocycle}})$ where n_1 is as defined above and $R_{1\text{-heterocycle}}$ is selected from the group consisting of:

morpholinyl,
 thiomorpholinyl,
 thiomorpholinyl S-oxide,
 thiomorpholinyl S,S-dioxide,
 5 piperazinyl,
 homopiperazinyl,
 pyrrolidinyl,
 pyrrolinyl,
 tetrahydropyranyl,
 10 piperidinyl,
 tetrahydrofuranyl,
 tetrahydrothienyl,
 homopiperidinyl,
 homomorpholinyl,
 15 homothiomorpholinyl,
 homothiomorpholinyl S,S-dioxide,
 oxazolidinonyl,
 dihydropyrazolyl,
 dihydropyrrolyl,
 20 dihydropyrazinyl,
 dihydropyridinyl,
 dihydropyrimidinyl,
 dihydrofuryl,
 dihydropyranyl,
 25 tetrahydrothienyl S-oxide,
 tetrahydrothienyl S,S-dioxide, and
 homothiomorpholinyl S-oxide,

where the $R_{1\text{-heterocycle}}$ group is bonded by any atom of the parent R_1 -
 heterocycle group substituted by hydrogen such that the new bond to the $R_{1\text{-heterocycle}}$ group
 30 replaces the hydrogen atom and its bond, where heterocycle is optionally substituted with
 one, two, three or four:

(1) C₁-C₆ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

5 (2) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

10 (3) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(4) -F, Cl, -Br or -I,

(5) C₁-C₆ alkoxy,

15 (6) -C₁-C₆ alkoxy optionally substituted with one, two, or three -F,

(7) -NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are as defined below,

(8) -OH,

(9) -C≡N,

20 (10) C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(11) -CO-(C₁-C₄ alkyl),

(12) -SO₂-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

25 (13) -CO-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(14) -SO₂-(C₁-C₄ alkyl), or

(15) =O, with the proviso that when n₁ is zero R_{1-heterocycle} is not bonded to the carbon chain by nitrogen;

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where R₂ is:

(I)-H,

(II) C₁-C₆ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(III) -(CH₂)₀₋₄-R₂₋₁ where R₂₋₁ is R_{1-aryl} or R_{1-heteroaryl} where R_{1-aryl} and R_{1-heteroaryl} are as defined above;

(IV) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(V) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl, or

(VI) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl;

where R₃ is:

(I)-H,

(II) C₁-C₆ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(III) -(CH₂)₀₋₄-R₂₋₁ where R₂₋₁ is R_{1-aryl} or R_{1-heteroaryl} where R_{1-aryl} and R_{1-heteroaryl} are as defined above

(IV) C₂-C₆ alkenyl with one or two double bonds,

(V) C₂-C₆ alkynyl with one or two triple bonds; or

(VI) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

and where R₂ and R₃ are taken together with the carbon to which they are attached to form a carbocycle of three, four, five, six, or seven carbon atoms, optionally

where one carbon atom is replaced by a heteroatom selected from the group consisting of -O-, -S-, -SO₂-, and -NR_{N-2}-, where R_{N-2} is selected from the group consisting of:

(a) -H,

(b) -C₁-C₆ alkyl optionally substituted with one substituent selected from the group consisting of:

(i) -OH, and

(ii) -NH₂,

(c) -C₁-C₆ alkyl optionally substituted with one, two, or three -F, -Cl, -Br, or -I,

(d) -C₃-C₇ cycloalkyl,

(e) -(C₁-C₂ alkyl)-(C₃-C₇ cycloalkyl),

(f) -(C₁-C₆ alkyl)-O-(C₁-C₃ alkyl),

(g) -C₂-C₆ alkenyl with one or two double bonds,

(h) -C₂-C₆ alkynyl with one or two triple bonds,

(i) -C₁-C₆ alkyl chain with one double bond and one triple bond,

(j) -R_{1-aryl} where R_{1-aryl} is as defined above, and

(k) -R_{1-heteroaryl} where R_{1-heteroaryl} is as defined above;

where R_N is:

(I) R_{N-1}-X_N- where X_N is selected from the group consisting of:

(A) -CO-,

(B) -SO₂-,

(C) -(CR'R'')₁₋₆ where R' and R'' are the same or different and are -H and C₁-C₄ alkyl,

(D) -CO-(CR'R'')₁₋₆-X_{N-1} where X_{N-1} is selected from the group consisting of -O-, -S- and -NR'- and where R' and R'' are as defined above, and

(E) a single bond;

where R_{N-1} is selected from the group consisting of:

(A) R_{N-aryl} where R_{N-aryl} is phenyl, 1-naphthyl, 2-naphthyl, tetralinyl, indanyl, 6,7,8,9-tetrahydro-5H-benzo[a]cycloheptenyl, or dihydronaphthyl optionally substituted with one, two or three of the following substituents which can be the same or different and are:

(1) C₁-C₆ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I,

-OH, -SH, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(2) -OH,

(3) $-NO_2$,

(4) -F, -Cl, -Br, -I,

(5) $-CO-OH$,

(6) $-C\equiv N$,

(7) $-(CH_2)_{0-4}-CO-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are selected from the group consisting of:

(a) -H,

(b) $-C_1-C_6$ alkyl optionally substituted with one substituent selected from the group consisting of:

(i) -OH, and

(ii) $-NH_2$,

(c) $-C_1-C_6$ alkyl optionally substituted with one, two, or three -F, -Cl, -Br, or -I,

(d) $-C_3-C_7$ cycloalkyl,

(e) $-(C_1-C_2 \text{ alkyl})-(C_3-C_7 \text{ cycloalkyl})$,

(f) $-(C_1-C_6 \text{ alkyl})-O-(C_1-C_3 \text{ alkyl})$,

(g) $-C_2-C_6$ alkenyl with one or two double bonds,

(h) $-C_2-C_6$ alkynyl with one or two triple bonds,

(i) $-C_1-C_6$ alkyl chain with one double bond and one triple bond,

(j) $-R_{1-aryl}$ where R_{1-aryl} is as defined above, and

(k) $-R_{1-heteroaryl}$ where $R_{1-heteroaryl}$ is as defined above,

(8) $-(CH_2)_{0-4}-CO-(C_1-C_{12} \text{ alkyl})$,

(9) $-(CH_2)_{0-4}-CO-(C_2-C_{12} \text{ alkenyl with one, two or three double bonds})$,

(10) $-(CH_2)_{0-4}-CO-(C_2-C_{12} \text{ alkynyl with one, two or three triple bonds})$,

(11) $-(CH_2)_{0-4}-CO-(C_3-C_7 \text{ cycloalkyl})$,

(12) $-(CH_2)_{0-4}-CO-R_{1-aryl}$ where R_{1-aryl} is as defined above,

(13) $-(CH_2)_{0-4}-CO-R_{1-heteroaryl}$ where $R_{1-heteroaryl}$ is as defined above,

(14) $-(CH_2)_{0-4}-CO-R_{1-heterocycle}$ where $R_{1-heterocycle}$ is as defined above,

5 (15) $-(CH_2)_{0-4}-CO-R_{N-4}$ where R_{N-4} is selected from the group consisting of morpholinyl, thiomorpholinyl, piperazinyl, piperidinyl, homomorpholinyl, homothiomorpholinyl, homothiomorpholinyl S-oxide, homothiomorpholinyl S,S-dioxide, pyrrolinyl and pyrrolidinyl where each group is optionally substituted with one, two, three, or four of C_1-C_6 alkyl,

10 (16) $-(CH_2)_{0-4}-CO-O-R_{N-5}$ where R_{N-5} is selected from the group consisting of:

(a) C_1-C_6 alkyl,

(b) $-(CH_2)_{0-2}-(R_{1-aryl})$ where R_{1-aryl} is as defined above,

15 (c) C_2-C_6 alkenyl containing one or two double bonds,

(d) C_2-C_6 alkynyl containing one or two triple bonds,

(e) C_3-C_7 cycloalkyl, and

20 (f) $-(CH_2)_{0-2}-(R_{1-heteroaryl})$ where $R_{1-heteroaryl}$ is as defined above,

(17) $-(CH_2)_{0-4}-SO_2-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are as defined above,

25 (18) $-(CH_2)_{0-4}-SO-(C_1-C_8 \text{ alkyl})$,

(19) $-(CH_2)_{0-4}-SO_2-(C_1-C_{12} \text{ alkyl})$,

(20) $-(CH_2)_{0-4}-SO_2-(C_3-C_7 \text{ cycloalkyl})$,

(21) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-O-R_{N-5}$ where R_{N-5} can be the same or different and is as defined above,

30 (22) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-N(R_{N-5})_2$, where R_{N-5} can be the same or different and is as defined above,

(23) $-(CH_2)_{0-4}-N-CS-N(R_{N-5})_2$, where R_{N-5} can be the same or different and is as defined above,

(24) $-(CH_2)_{0-4}-N(-H \text{ or } R_{N-5})-CO-R_{N-2}$ where R_{N-5} and R_{N-2} can be the same or different and are as defined above,

- (25) $-(CH_2)_{0-4}-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} can be the same or different and are as defined above,
- (26) $-(CH_2)_{0-4}-R_{N-4}$ where R_{N-4} is as defined above,
- (27) $-(CH_2)_{0-4}-O-CO-(C_1-C_6 \text{ alkyl})$,
- (28) $-(CH_2)_{0-4}-O-P(O)-(OR_{N-aryl-1})_2$ where $R_{N-aryl-1}$ is $-H$ or C_1-C_4 alkyl,
- (29) $-(CH_2)_{0-4}-O-CO-N(R_{N-5})_2$ where R_{N-5} is as defined above,
- (30) $-(CH_2)_{0-4}-O-CS-N(R_{N-5})_2$ where R_{N-5} is as defined above,
- (31) $-(CH_2)_{0-4}-O-(R_{N-5})_2$ where R_{N-5} is as defined above,
- (32) $-(CH_2)_{0-4}-O-(R_{N-5})_2-COOH$ where R_{N-5} is as defined above,
- (33) $-(CH_2)_{0-4}-S-(R_{N-5})_2$ where R_{N-5} is as defined above,
- (34) $-(CH_2)_{0-4}-O-(C_1-C_6 \text{ alkyl optionally substituted with one, two, three, four, or five of } -F)$,
- (35) C_3-C_7 cycloalkyl,
- (36) C_2-C_6 alkenyl with one or two double bonds optionally substituted with C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, or $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,
- (37) C_2-C_6 alkynyl with one or two triple bonds optionally substituted with C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, or $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,
- (38) $-(CH_2)_{0-4}-N(-H \text{ or } R_{N-5})-SO_2-R_{N-2}$ where R_{N-5} and R_{N-2} can be the same or different and are as described above, or
- (39) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl,
- (B) $-R_{N-heteroaryl}$ where $R_{N-heteroaryl}$ is selected from the group consisting of:
- pyridinyl,
- pyrimidinyl,
- quinolinyl,
- benzothienyl,
- indolyl,

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indolinyI,
pyridazinyI,
pyrazinyI,
isoindolyI,
isoquinolyI,
quinazolinyl,
quinoxalinyI,
phthalazinyI,
imidazolyl,
isoxazolyl,
pyrazolyl,
oxazolyl,
thiazolyl,
indolizinyI,
indazolyl,
benzothiazolyl,
benzimidazolyl,
benzofuranyl,
furanyl,
thienyl,
pyrrolyl,
oxadiazolyl,
thiadiazolyl,
triazolyl,
tetrazolyl,
oxazolopyridinyI,
imidazopyridinyI,
isothiazolyl,
naphthyridinyI,
cinnolinyI,
carbazolyl,
beta-carbolinyI,
isochromanyl,
chromanyl,

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tetrahydroisoquinolinyl,
isoindolinyl,
isobenzotetrahydrofuranyl,
isobenzotetrahydrothienyl,
isobenzothieryl,
benzoxazolyl,
pyridopyridinyl,
benzotetrahydrofuranyl,
benzotetrahydrothienyl,
purinyl,
benzodioxolyl,
triazinyl,
phenoxazinyl,
phenothiazinyl,
pteridinyl,
benzothiazolyl,
imidazopyridinyl,
imidazothiazolyl,
dihydrobenzisoquinazolinyl,
benzisoquinazolinyl,
benzoxazinyl,
dihydrobenzisothiazinyl,
benzopyranyl,
benzothiopyranyl,
coumarinyl,
isocoumarinyl,
chromonyl,
chromanonyl,
pyridinyl-N-oxide,
tetrahydroquinolinyl,
dihydroquinolinyl,
dihydroquinolinonyl,
dihydroisoquinolinonyl,
dihydrocoumarinyl,

dihydroisocoumarinyl,
 isoindolinonyl,
 benzodioxanyl,
 benzoxazolinonyl,
 5 pyrrolyl N-oxide,
 pyrimidinyl N-oxide,
 pyridazinyl N-oxide,
 pyrazinyl N-oxide,
 10 quinoliny N-oxide,
 indolyl N-oxide,
 indolinyl N-oxide,
 isoquinolyl N-oxide,
 quinazolinyl N-oxide,
 quinoxaliny N-oxide,
 15 phthalazinyl N-oxide,
 imidazolyl N-oxide,
 isoxazolyl N-oxide,
 oxazolyl N-oxide,
 thiazolyl N-oxide,
 20 indoliziny N-oxide,
 indazolyl N-oxide,
 benzothiazolyl N-oxide,
 benzimidazolyl N-oxide,
 pyrrolyl N-oxide,
 25 oxadiazolyl N-oxide,
 thiadiazolyl N-oxide,
 triazolyl N-oxide,
 tetrazolyl N-oxide,
 benzothiopyranyl S-oxide, and
 30 benzothiopyranyl S,S-dioxide

where the $R_{N\text{-heteroaryl}}$ group is bonded by any atom of the parent $R_{N\text{-heteroaryl}}$ group substituted by hydrogen such that the new bond to the $R_{N\text{-heteroaryl}}$ group replaces the hydrogen atom and its bond, where heteroaryl is optionally substituted with one, two, three, or four of:

(1) C_1-C_6 alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

5

(2) $-OH$,

(3) $-NO_2$,

(4) $-F$, $-Cl$, $-Br$, or $-I$,

(5) $-CO-OH$,

(6) $-C\equiv N$,

10

(7) $-(CH_2)_{0-4}-CO-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are selected from the group consisting of:

(a) $-H$,

(b) $-C_1-C_6$ alkyl optionally substituted with one substituent selected from the group consisting of:

15

(i) $-OH$, and

(ii) $-NH_2$,

(c) $-C_1-C_6$ alkyl optionally substituted with one, two, or three $-F$, $-Cl$, $-Br$, $-I$,

20

(d) $-C_3-C_7$ cycloalkyl,

(e) $-(C_1-C_2 \text{ alkyl})-(C_3-C_7 \text{ cycloalkyl})$,

(f) $-(C_1-C_6 \text{ alkyl})-O-(C_1-C_3 \text{ alkyl})$,

(g) $-C_2-C_6$ alkenyl with one or two double bonds,

(h) $-C_2-C_6$ alkynyl with one or two triple bonds,

25

triple bond,

(j) $-R_{1-aryl}$ where R_{1-aryl} is as defined above,

(k) $-R_{1-heteroaryl}$ where $R_{1-heteroaryl}$ is as defined above,

(8) $-(CH_2)_{0-4}-CO-(C_1-C_{12} \text{ alkyl})$,

30

double bonds),

(9) $-(CH_2)_{0-4}-CO-(C_2-C_{12} \text{ alkenyl with one, two or three$

(10) $-(CH_2)_{0-4}-CO-(C_2-C_{12} \text{ alkynyl with one, two or three$

triple bonds),

(11) $-(CH_2)_{0-4}-CO-(C_3-C_7 \text{ cycloalkyl})$,

(12) $-(CH_2)_{0-4}-CO-R_{1-aryl}$ where R_{1-aryl} is as defined above,
 (13) $-(CH_2)_{0-4}-CO-R_{1-heteroaryl}$ where $R_{1-heteroaryl}$ is as defined
 above,

(14) $-(CH_2)_{0-4}-CO-R_{1-heterocycle}$ where $R_{1-heterocycle}$ is as
 5 defined above,

(15) $-(CH_2)_{0-4}-CO-R_{N-4}$ where R_{N-4} is selected from the
 group consisting of morpholinyl, thiomorpholinyl, piperazinyl, piperidinyl,
 homomorpholinyl, homothiomorpholinyl, homothiomorpholinyl S-oxide,
 homothiomorpholinyl S,S-dioxide, pyrrolinyl and pyrrolidinyl where each group is
 10 optionally substituted with one, two, three, or four of C_1-C_6 alkyl,

(16) $-(CH_2)_{0-4}-CO-O-R_{N-5}$ where R_{N-5} is selected from the
 group consisting of:

(a) C_1-C_6 alkyl,
 (b) $-(CH_2)_{0-2}-(R_{1-aryl})$ where R_{1-aryl} is as defined
 15 above,
 (c) C_2-C_6 alkenyl containing one or two double
 bonds,
 (d) C_2-C_6 alkynyl containing one or two triple
 bonds,
 20 (e) C_3-C_7 cycloalkyl, and
 (f) $-(CH_2)_{0-2}-(R_{1-heteroaryl})$ where $R_{1-heteroaryl}$ is as
 defined above,

(17) $-(CH_2)_{0-4}-SO_2-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are as
 defined above,

(18) $-(CH_2)_{0-4}-SO-(C_1-C_8 \text{ alkyl})$,
 (19) $-(CH_2)_{0-4}-SO_2-(C_1-C_{12} \text{ alkyl})$,
 (20) $-(CH_2)_{0-4}-SO_2-(C_3-C_7 \text{ cycloalkyl})$,
 (21) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-O-R_{N-5}$ where R_{N-5} can be
 25 the same or different and is as defined above,

(22) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-N(R_{N-5})_2$, where R_{N-5} can
 30 be the same or different and is as defined above,

(23) $-(CH_2)_{0-4}-N-CS-N(R_{N-5})_2$, where R_{N-5} can be the same
 or different and is as defined above,

(24) $-(CH_2)_{0-4}-N(-H \text{ or } R_{N-5})-CO-R_{N-2}$ where R_{N-5} and R_{N-2} can be the same or different and are as defined above,

(25) $-(CH_2)_{0-4}-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} can be the same or different and are as defined above,

5 (26) $-(CH_2)_{0-4}-R_{N-4}$ where R_{N-4} is as defined above,

(27) $-(CH_2)_{0-4}-O-CO-(C_1-C_6 \text{ alkyl})$,

(28) $-(CH_2)_{0-4}-O-P(O)-(OR_{N-aryl-1})_2$ where $R_{N-aryl-1}$ is $-H$ or C_1-C_4 alkyl,

10 (29) $-(CH_2)_{0-4}-O-CO-N(R_{N-5})_2$ where R_{N-5} is as defined above,

(30) $-(CH_2)_{0-4}-O-CS-N(R_{N-5})_2$ where R_{N-5} is as defined above,

(31) $-(CH_2)_{0-4}-O-(R_{N-5})_2$ where R_{N-5} is as defined above,

15 (32) $-(CH_2)_{0-4}-O-(R_{N-5})_2-COOH$ where R_{N-5} is as defined above,

(33) $-(CH_2)_{0-4}-S-(R_{N-5})_2$ where R_{N-5} is as defined above,

(34) $-(CH_2)_{0-4}-O-(C_1-C_6 \text{ alkyl optionally substituted with one, two, three, four, or five of } -F)$,

(35) C_3-C_7 cycloalkyl,

20 (36) C_2-C_6 alkenyl with one or two double bonds optionally substituted with C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, or $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(37) C_2-C_6 alkynyl with one or two triple bonds optionally substituted with C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, or $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

25 (38) $-(CH_2)_{0-4}-N(-H \text{ or } R_{N-5})-SO_2-R_{N-2}$ where R_{N-5} and R_{N-2} can be the same or different and are as defined above, or

(39) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl,

30 (C) $R_{N-aryl}-W-R_{N-aryl}$, where R_{N-aryl} can be the same or different,

(D) $R_{N-aryl}-W-R_{N-heteroaryl}$,

(E) $R_{N-aryl}-W-R_{N-1-heterocycle}$, wherein $R_{N-1-heterocycle}$ is the same as R_1 -heterocycle, and R_1 -heterocycle is as defined above

(F) $R_{N-heteroaryl}-W-R_{N-aryl}$,

(G) $R_{N\text{-heteroaryl}}\text{-W-}R_{N\text{-heteroaryl}}$,

(H) $R_{N\text{-heteroaryl}}\text{-W-}R_{N\text{-I-heterocycle}}$,

(I) $R_{N\text{-heterocycle}}\text{-W-}R_{N\text{-aryl}}$, wherein $R_{N\text{-heterocycle}}$ is the same as $R_{I\text{-heterocycle}}$, and $R_{I\text{-heterocycle}}$ is as defined above, and $R_{N\text{-aryl}}$ is as defined above,

5 (J) $R_{N\text{-heterocycle}}\text{-W-}R_{N\text{-heteroaryl}}$, and

(K) $R_{N\text{-heterocycle}}\text{-W-}R_{N\text{-I-heterocycle}}$,

where W is

(9) $\text{-(CH}_2\text{)}_{0-4}\text{-}$,

(10) -O- ,

10 (11) $\text{-S(O)}_{0-2}\text{-}$,

(12) $\text{-N(R}_{N-5}\text{)-}$ where R_{N-5} is as defined above, or

(5) -CO- ;

(II) $\text{-CO-(C}_1\text{-C}_{10}\text{ alkyl)}$ where alkyl is optionally substituted with one three substituents selected from the group consisting of:

15 (A) -OH ,

(B) $\text{-C}_1\text{-C}_6\text{ alkoxy}$,

(C) $\text{-C}_1\text{-C}_6\text{ thioalkoxy}$,

(D) $\text{-CO-O-}R_{N-8}$ where R_{N-8} is -H , $\text{C}_1\text{-C}_6\text{ alkyl}$ or -phenyl ,

20 (E) $\text{-CO-NR}_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(F) $\text{-CO-}R_{N-4}$ where R_{N-4} is as defined above,

(G) $\text{-SO}_2\text{-(C}_1\text{-C}_8\text{ alkyl)}$,

(H) $\text{-SO}_2\text{-NR}_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

25 (I) $\text{-NH-CO-(C}_1\text{-C}_6\text{ alkyl)}$,

(J) $\text{-NH-CO-O-}R_{N-8}$ where R_{N-8} is as defined above,

(K) $\text{-NR}_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(L) $\text{-}R_{N-4}$ where R_{N-4} is as defined above,

30 (M) $\text{-O-CO-(C}_1\text{-C}_6\text{ alkyl)}$,

(N) $\text{-O-CO-NR}_{N-8}R_{N-8}$ where R_{N-8} are the same or different and are as defined above,

(O) $\text{-O-(C}_1\text{-C}_5\text{ alkyl)-COOH}$,

(P) $-O-(C_1-C_6 \text{ alkyl optionally substituted with one, two, or three of } -F, -Cl, -Br, \text{ or } -I),$

(Q) $-NH-SO_2-(C_1-C_6 \text{ alkyl}),$ and

(R) $-F,$ or $-Cl,$

5 (III) $-CO-(C_1-C_6 \text{ alkyl})-O-(C_1-C_6 \text{ alkyl})$ where alkyl is optionally substituted with one, two, or three substituents selected from the group consisting of:

(A) $-OH,$

(B) $-C_1-C_6 \text{ alkoxy},$

(C) $-C_1-C_6 \text{ thioalkoxy},$

10 (D) $-CO-O-R_{N-8}$ where R_{N-8} is $-H,$ $C_1-C_6 \text{ alkyl}$ or $-phenyl,$

(E) $-CO-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(F) $-CO-R_{N-4}$ where R_{N-4} is as defined above,

(G) $-SO_2-(C_1-C_8 \text{ alkyl}),$

15 (H) $-SO_2-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(I) $-NH-CO-(C_1-C_6 \text{ alkyl}),$

(J) $-NH-CO-O-R_{N-8}$ where R_{N-8} is as defined above,

20 (K) $-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(L) $-R_{N-4}$ where R_{N-4} is as defined above,

(M) $-O-CO-(C_1-C_6 \text{ alkyl}),$

(N) $-O-CO-NR_{N-8}R_{N-8}$ where R_{N-8} are the same or different and are as defined above,

25 (O) $-O-(C_1-C_5 \text{ alkyl})-COOH,$

(P) $-O-(C_1-C_6 \text{ alkyl optionally substituted with one, two, or three of } -F, -Cl, -Br, \text{ or } -I),$

(Q) $-NH-SO_2-(C_1-C_6 \text{ alkyl}),$ and

(R) $-F,$ or $-Cl,$

30 (IV) $-CO-(C_1-C_6 \text{ alkyl})-S-(C_1-C_6 \text{ alkyl})$ where alkyl is optionally substituted with one, two, or three of substituents selected from the group consisting of:

(A) $-OH,$

- (B) $-C_1-C_6$ alkoxy,
 (C) $-C_1-C_6$ thioalkoxy,
 (D) $-\text{CO}-\text{O}-R_{N-8}$ where R_{N-8} is as defined above,
 (E) $-\text{CO}-\text{NR}_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different
 5 and are as defined above,
 (F) $-\text{CO}-R_{N-4}$ where R_{N-4} is as defined above,
 (G) $-\text{SO}_2-(C_1-C_8 \text{ alkyl})$,
 (H) $-\text{SO}_2-\text{NR}_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different
 and are as defined above,
 10 (I) $-\text{NH}-\text{CO}-(C_1-C_6 \text{ alkyl})$,
 (J) $-\text{NH}-\text{CO}-\text{O}-R_{N-8}$ where R_{N-8} is as defined above,
 (K) $-\text{NR}_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and
 are as defined above,
 15 (L) $-R_{N-4}$ where R_{N-4} is as defined above,
 (M) $-\text{O}-\text{CO}-(C_1-C_6 \text{ alkyl})$,
 (N) $-\text{O}-\text{CO}-\text{NR}_{N-8}R_{N-8}$ where R_{N-8} are the same or different and are
 as defined above,
 (O) $-\text{O}-(C_1-C_5 \text{ alkyl})-\text{COOH}$,
 (P) $-\text{O}-(C_1-C_6 \text{ alkyl})$ optionally substituted with one, two, or three of
 20 $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, or $-\text{I}$),
 (Q) $-\text{NH}-\text{SO}_2-(C_1-C_6 \text{ alkyl})$, and
 (R) $-\text{F}$, or $-\text{Cl}$,
 (V) $-\text{CO}-\text{CH}(-(\text{CH}_2)_{0-2}-\text{O}-R_{N-10})-(\text{CH}_2)_{0-2}-R_{N-\text{aryl}}/R_{N-\text{heteroaryl}}$ where $R_{N-\text{aryl}}$
 and $R_{N-\text{heteroaryl}}$ are as defined above, where R_{N-10} is selected from the group consisting of:
 25 (A) $-\text{H}$,
 (B) C_1-C_6 alkyl,
 (C) C_3-C_7 cycloalkyl,
 (D) C_2-C_6 alkenyl with one double bond,
 (E) C_2-C_6 alkynyl with one triple bond,
 30 (F) $R_{1-\text{aryl}}$ where $R_{1-\text{aryl}}$ is as defined above, and
 (G) $R_{N-\text{heteroaryl}}$ where $R_{N-\text{heteroaryl}}$ is as defined above, or
 (VI) $-\text{CO}-(C_3-C_8 \text{ cycloalkyl})$ where alkyl is optionally substituted with one
 or two substituents selected from the group consisting of:

- (A) $-(CH_2)_{0-4}-OH$,
(B) $-(CH_2)_{0-4}-C_1-C_6$ alkoxy,
(C) $-(CH_2)_{0-4}-C_1-C_6$ thioalkoxy,
(D) $-(CH_2)_{0-4}-CO-O-R_{N-8}$ where R_{N-8} is $-H$, C_1-C_6 alkyl or phenyl,
5 (E) $-(CH_2)_{0-4}-CO-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,
(F) $-(CH_2)_{0-4}-CO-R_{N-4}$ where R_{N-4} is as defined above,
(G) $-(CH_2)_{0-4}-SO_2-(C_1-C_8$ alkyl),
(H) $-(CH_2)_{0-4}-SO_2-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or
10 different and are as defined above,
(I) $-(CH_2)_{0-4}-NH-CO-(C_1-C_6$ alkyl),
(J) $-NH-CO-O-R_{N-8}$ where R_{N-8} is as defined above,
(K) $-(CH_2)_{0-4}-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,
15 (L) $-(CH_2)_{0-4}-R_{N-4}$ where R_{N-4} is as defined above,
(M) $-O-CO-(C_1-C_6$ alkyl),
(N) $-O-CO-NR_{N-8}R_{N-8}$ where R_{N-8} are the same or different and are as defined above,
(O) $-O-(C_1-C_5$ alkyl)- $COOH$,
20 (P) $-O-(C_1-C_6$ alkyl optionally substituted with one, two, or three of $-F$, $-Cl$, $-Br$, or $-I$),
(Q) $-NH-SO_2-(C_1-C_6$ alkyl), and
(R) $-F$, or $-Cl$;

25 where R_A is:

- (I) $-C_1-C_{10}$ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above, $-OC=O NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above, $-S(=O)_{0-2} R_{1-a}$ where
30 R_{1-a} is as defined above, $-NR_{1-a}C=O NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above, $-C=O NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above, and $-S(=O)_2 NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(II) $-(CH_2)_{0-3}-(C_3-C_8)$ cycloalkyl where cycloalkyl can be optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkCyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, $-CO-OH$, $-CO-O-(C_1-C_4)$ alkyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

5 (III) $-(CR_{A-x}R_{A-y})_{0-4}-R_{A-aryl}$ where R_{A-x} and R_{A-y} are

(A) $-H$,

(B) C_1-C_4 alkyl optionally substituted with one or two $-OH$,

(C) C_1-C_4 alkoxy optionally substituted with one, two, or three of -

F,

10 (D) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl,

(E) C_2-C_6 alkenyl containing one or two double bonds,

(F) C_2-C_6 alkynyl containing one or two triple bonds, or

(G) phenyl,

and where R_{A-x} and R_{A-y} are taken together with the carbon to which they
15 are attached to form a carbocycle of three, four, five, six or seven carbon atoms, optionally where one carbon atom is replaced by a heteroatom selected from the group consisting of $-O-$, $-S-$, $-SO_2-$, and $-NR_{N-2}-$ and R_{A-aryl} is the same as R_{N-aryl} ,

(IV) $-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heteroaryl}$ where $R_{A-heteroaryl}$ is the same as $R_{N-heteroaryl}$ and R_{A-x} and R_{A-y} are as defined above,

20 (V) $-(CR_{A-x}R_{A-y})_{0-4}-R_{A-aryl}-R_{A-aryl}$ where R_{A-aryl} , R_{A-x} and R_{A-y} are as defined above,

(VI) $-(CR_{A-x}R_{A-y})_{0-4}-R_{A-aryl}-R_{A-heteroaryl}$ where R_{A-aryl} , $R_{A-heteroaryl}$, R_{A-x} and R_{A-y} are as defined above,

(VII) $-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heteroaryl}-R_{A-aryl}$ where $R_{A-heteroaryl}$, R_{A-aryl} , R_{A-x} and
25 R_{A-y} are as defined above,

(VIII) $-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heteroaryl}-R_{A-heteroaryl}$ where $R_{A-heteroaryl}$, R_{A-x} and R_{A-y} are as defined above,

(IX) $-(CR_{A-x}R_{A-y})_{0-4}-R_{A-aryl}-R_{A-heterocycle}$ where $R_{A-heterocycle}$ is defined as $R_{1-heterocycle}$, and where R_{A-aryl} , R_{A-x} and R_{A-y} are as defined above,

30 (X) $-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heteroaryl}-R_{A-heterocycle}$ where $R_{A-heteroaryl}$, $R_{A-heterocycle}$, R_{A-x} and R_{A-y} are as defined above,

(XI) $-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heterocycle}-R_{A-aryl}$ where $R_{A-heterocycle}$, R_{A-aryl} , R_{A-x} and R_{A-y} are as defined above,

(XII) $-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heterocycle}-R_{A-heteroaryl}$ where $R_{A-heterocycle}$, $R_{A-heteroaryl}$, R_{A-x} and R_{A-y} are as defined above,

(XIII) $-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heterocycle}-R_{A-heterocycle}$ where $R_{A-heterocycle}$, R_{A-x} and R_{A-y} are as defined above,

5 (XIV) $-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heterocycle}$ where $R_{A-heterocycle}$, R_{A-x} and R_{A-y} are as defined above,

(XV) $-[C(R_{A-1})(R_{A-2})]_{1-3}-CO-N-(R_{A-3})_2$ where R_{A-1} and R_{A-2} are the same or different and are selected from the group consisting of:

(A) -H,

10 (B) C_1-C_6 alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, -O-phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(C) C_2-C_6 alkenyl with one or two double bonds, optionally
15 substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, -O-phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(D) C_2-C_6 alkynyl with one or two triple bonds, optionally
20 substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, -O-phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(E) $-(CH_2)_{1-2}-S(O)_{0-2}-(C_1-C_6 \text{ alkyl})$,

(F) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl, optionally substituted with one,
25 two or three substituents selected from the group consisting of C_1-C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, -O-phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(G) $-(C_1-C_4 \text{ alkyl})-R_{A'-aryl}$ where $R_{A'-aryl}$ is as defined for R_{1-aryl} ,

(H) $-(C_1-C_4 \text{ alkyl})-R_{A-heteroaryl}$ where $R_{A-heteroaryl}$ is as defined above,

(I) $-(C_1-C_4 \text{ alkyl})-R_{A-heterocycle}$ where $R_{A-heterocycle}$ is as defined above,

30 (J) $-R_{A-heteroaryl}$ where $R_{A-heteroaryl}$ is as defined above,

(K) $-R_{A-heterocycle}$ where $R_{A-heterocycle}$ is as defined above,

(M) $-(CH_2)_{1-4}-R_{A-4}-(CH_2)_{0-4}-R_{A'-aryl}$ where R_{A-4} is -O-, -S- or $-NR_{A-5}-$ where R_{A-5} is C_1-C_6 alkyl, and where $R_{A'-aryl}$ is defined above,

(N) $-(CH_2)_{1-4}-R_{A-4}-(CH_2)_{0-4}-R_{A-heteroaryl}$ where R_{A-4} and $R_{A-heteroaryl}$ are as defined above, and

(O) $-R_{A'-aryl}$ where $R_{A'-aryl}$ is as defined above,
and where R_{A-3} is the same or different and is:

5

(A) -H,

(B) $-C_1-C_6$ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, -O-phenyl, $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

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(C) C_2-C_6 alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, -O-phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(D) C_2-C_6 alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, -O-phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(E) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, -O-phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

20

(F) $-R_{A'-aryl}$ where $R_{A'-aryl}$ is as defined above,

(G) $-R_{A-heteroaryl}$ where $R_{A-heteroaryl}$ is as defined above,

(H) $-R_{A-heterocycle}$ where $R_{A-heterocycle}$ is as defined above,

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(I) $-(C_1-C_4 \text{ alkyl})-R_{A'-aryl}$ where $R_{A'-aryl}$ is as defined above,

(J) $-(C_1-C_4 \text{ alkyl})-R_{A-heteroaryl}$ where $R_{A-heteroaryl}$ is as defined above,

(K) $-(C_1-C_4 \text{ alkyl})-R_{A-heterocycle}$ where $R_{A-heterocycle}$ is as defined

above, or

(XVI) $-\text{CH}(R_{A-aryl})_2$ where R_{A-aryl} are the same or different and are as defined above,

30

(XVII) $-\text{CH}(R_{A-heteroaryl})_2$ where $R_{A-heteroaryl}$ are the same or different and are as defined above,

(XVIII) $-\text{CH}(\text{R}_{\text{A-aryl}})(\text{R}_{\text{A-heteroaryl}})$ where $\text{R}_{\text{A-aryl}}$ and $\text{R}_{\text{A-heteroaryl}}$ are as defined above,

(XIX) -cyclopentyl, -cyclohexyl, or -cycloheptyl ring fused to $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-heterocycle}}$ where $\text{R}_{\text{A-aryl}}$ or $\text{R}_{\text{A-heteroaryl}}$ or $\text{R}_{\text{A-heterocycle}}$ are as defined above where
 5 one carbon of cyclopentyl, cyclohexyl, or -cycloheptyl is optionally replaced with NH , $\text{NR}_{\text{N-5}}$, O , or $\text{S}(=\text{O})_{0-2}$, and where cyclopentyl, cyclohexyl, or -cycloheptyl can be optionally substituted with one or two $-\text{C}_1-\text{C}_3$ alkyl, $-\text{F}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_6 alkoxy, $=\text{O}$, or $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(XX) C_2-C_{10} alkenyl containing one or two double bonds optionally
 10 substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_6 alkoxy, $-\text{O-phenyl}$, and $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(XXI) C_2-C_{10} alkynyl containing one or two triple bonds optionally
 15 substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_6 alkoxy, $-\text{O-phenyl}$, $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(XXI) $-(\text{CH}_2)_{0-1}-\text{CHR}_{\text{A-6}}-(\text{CH}_2)_{0-1}-\text{R}_{\text{A-aryl}}$ where $\text{R}_{\text{A-aryl}}$ is as defined above and $\text{R}_{\text{A-6}}$ is $-(\text{CH}_2)_{0-6}-\text{OH}$,

(XXII) $-(\text{CH}_2)_{0-1}-\text{CHR}_{\text{A-6}}-(\text{CH}_2)_{0-1}-\text{R}_{\text{A-heteroaryl}}$ where $\text{R}_{\text{A-heteroaryl}}$ and $\text{R}_{\text{A-6}}$ is
 20 as defined above,

(XXIII) $-\text{CH}(-\text{R}_{\text{A-aryl}} \text{ or } \text{R}_{\text{A-heteroaryl}})-\text{CO}-\text{O}(\text{C}_1-\text{C}_4 \text{ alkyl})$ where $\text{R}_{\text{A-aryl}}$ and $\text{R}_{\text{A-heteroaryl}}$ are as defined above,

(XXIV) $-\text{CH}(-\text{CH}_2-\text{OH})-\text{CH}(-\text{OH})-\text{micro-NO}_2$,

(XXV) $(\text{C}_1-\text{C}_6 \text{ alkyl})-\text{O}-(\text{C}_1-\text{C}_6 \text{ alkyl})-\text{OH}$,

(XXVII) $-\text{CH}_2-\text{NH}-\text{CH}_2-\text{CH}(-\text{O}-\text{CH}_2-\text{CH}_3)_2$,

(XXVIII) $-\text{H}$,

(XXIX) $-(\text{CH}_2)_{0-6}-\text{C}(=\text{NR}_{1-a})(\text{NR}_{1-a}\text{R}_{1-b})$ where R_{1-a} and R_{1-b} are as defined
 above; or

(XXX)

30 $-\text{C}=\text{OC}(\text{HR}_6)\text{NHR}_7$, where R_6 and R_7 are as defined below,
 $-\text{C}=\text{OR}_7$, where R_7 is as defined below,
 $-\text{C}=\text{OOR}_7$, where R_7 is as defined below, or
 $-\text{SOOR}_7$ where R_7 is as defined below,

wherein R₆ is:

hydrogen,

C₁ - C₃ alkyl,

phenyl,

thioalkoxyalkyl,

alkyl substituted aryl,

cycloalkyl,

cycloalkylalkyl,

hydroxyalkyl,

alkoxyalkyl,

aryloxyalkyl,

haloalkyl,

carboxyalkyl,

alkoxycarbonylalkyl,

aminoalkyl,

(N-protected)aminoalkyl,

alkylaminoalkyl,

((N-protected)(alkyl)amino)alkyl,

dialkylaminoalkyl,

guanidinoalkyl,

lower alkenyl,

heterocyclic,

(heterocyclic)alkyl),

arylthioalkyl,

arylsulfonylalkyl,

(heterocyclic)thioalkyl,

(heterocyclic)sulfonylalkyl,

(heterocyclic)oxyalkyl,

arylalkoxyalkyl,

arylthioalkoxyalkyl,

arylalkylsulfonylalkyl,

(heterocyclic))alkoxyalkyl,

(heterocyclic)thioalkoxyalkyl,

(heterocyclic)alkylsulfonylalkyl,

cycloalkyloxyalkyl,
 cycloalkylthioalkyl,
 cycloalkylsulfonylalkyl,
 cycloalkylalkoxyalkyl,
 5 cycloalkylthioalkoxyalkyl,
 cycloalkylalkylsulfonylalkyl,
 aminocarbonyl,
 alkylaminocarbonyl,
 dialkylaminocarbonyl,
 10 aroylalkyl,
 (heterocyclic)carbonylalkyl,
 polyhydroxyalkyl,
 aminocarbonylalkyl,
 alkylaminocarbonylalkyl,
 15 dialkylaminocarbonylalkyl,
 aryloxyalkyl, or
 alkylsulfonylalkyl,

wherein heterocyclic is pyridyl, thiazolyl, isothiazolyl,
 oxazolyl, isoxazolyl, furanyl, thienyl, tetrahydrofuranyl, tetrahydrothienyl and
 20 tetrahydro[2H]pyranyl and wherein the heterocycle is unsubstituted or substituted with
 one to three substituents independently selected from hydroxy, halo, amino, alkylamino,
 dialkylamino, alkoxy, polyalkoxy, haloalkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl,
 COOH, -SO₃H, lower alkenyl or lower alkyl;

wherein R₇ is:

25 C₁ - C₃ alkyl,
 phenyl,
 thioalkoxyalkyl,
 (aryl)alkyl,
 cycloalkyl,
 30 cycloalkylalkyl,
 hydroxyalkyl,
 alkoxyalkyl,
 aryloxyalkyl,
 haloalkyl,

carboxyalkyl,
alkoxycarbonylalkyl,
aminoalkyl,
(N-protected)aminocalkyl,
alkylaminoalkyl,
((N-protected)(alkyl)amino)alkyl,
dialkylaminoalkyl,
guanidinoalkyl,
lower alkenyl,
heterocyclic,
(heterocyclic)alkyl),
arylthioalkyl,
arylsulfonyalkyl,
(heterocyclic)thioalkyl,
(heterocyclic)sulfonylalkyl,
(heterocyclic)oxyalkyl,
arylalkoxyalkyl,
arylthioalkoxyalkyl,
arylalkylsulfonylalkyl,
(heterocyclic)alkoxyalkyl,
(heterocyclic)thioalkoxyalkyl,
(heterocyclic)alkylsulfonylalkyl,
cycloalkyloxyalkyl,
cycloalkylthioalkyl,
cycloalkylsulfonylalkyl,
cycloalkylalkoxyalkyl,
cycloalkylthioalkoxyalkyl,
cycloalkylalkylsulfonylalkyl,
aminocarbonyl,
alkylaminocarbonyl,
dialkylaminocarbonyl,
aroylalkyl,
(heterocyclic)carbonylalkyl,
polyhydroxyalkyl,

5

10

where R_B is:

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(

25

(A) $-H,$

(B) C₁-C₄ alkyl optionally substituted with one or two -OH,

(C) C₁-C₄ alkoxy optionally substituted with one, two, or three of -

F,

30

(D) $-(\text{CH}_2)_{0-4}-\text{C}_3-\text{C}_7$ cycloalkyl,

(E) C₂-C₆ alkenyl containing one or two double bonds,

(F) C₂-C₆ alkynyl containing one or two triple bonds, or

(G) phenyl,

and where R_{B-x} and R_{B-y} are taken together with the carbon to which they are attached to form a carbocycle of three, four, five, six or seven carbon atoms, optionally where one carbon atom is replaced by a heteroatom selected from the group consisting of $-O-$, $-S-$, $-SO_2-$, and $-NR_{N-2}$ where R_{N-2} is as defined above, and R_{B-aryl} is the same as R_{N-aryl} and is defined above

(IV) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heteroaryl}$ where $R_{B-heteroaryl}$ is the same as $R_{N-heteroaryl}$, R_{B-x} , and R_{B-y} are as defined above,

(V) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-aryl}-R_{B-aryl}$ where R_{B-aryl} , R_{B-x} , and R_{B-y} are as defined above,

(VI) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-aryl}-R_{B-heteroaryl}$ where R_{B-aryl} , $R_{B-heteroaryl}$, R_{B-x} and R_{B-y} are as defined above,

(VII) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heteroaryl}-R_{B-aryl}$ where $R_{B-heteroaryl}$, R_{B-aryl} , R_{B-x} and R_{B-y} are as defined above,

(VIII) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heteroaryl}-R_{B-heteroaryl}$ where $R_{B-heteroaryl}$, R_{B-x} and R_{B-y} are as defined above,

(IX) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-aryl}-R_{B-heterocycle}$ where $R_{B-heterocycle}$ is defined as $R_{1-heterocycle}$, and where R_{B-aryl} , R_{B-x} and R_{B-y} are as defined above,

(X) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heteroaryl}-R_{B-heterocycle}$ where $R_{B-heteroaryl}$, $R_{B-heterocycle}$, R_{B-x} and R_{B-y} are as defined above,

(XI) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heterocycle}-R_{B-aryl}$ where $R_{B-heterocycle}$, R_{B-aryl} , R_{B-x} and R_{B-y} are as defined above,

(XII) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heterocycle}-R_{B-heteroaryl}$ where $R_{B-heterocycle}$, $R_{B-heteroaryl}$, R_{B-x} and R_{B-y} are as defined above,

(XIII) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heterocycle}-R_{B-heterocycle}$ where $R_{B-heterocycle}$, R_{B-x} and R_{B-y} are as defined above,

(XIV) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heterocycle}$ where $R_{B-heterocycle}$, R_{B-x} and R_{B-y} are as defined above,

(XV) $-[C(R_{B-1})(R_{B-2})]_{1-3}-CO-N-(R_{B-3})_2$ where R_{B-1} and R_{B-2} are the same or different and are selected from the group consisting of:

(A) $-H$,

(B) $-C_1-C_6$ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$,

-SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(C) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(D) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(E) -(CH₂)₁₋₂-S(O)₀₋₂-(C₁-C₆ alkyl),

(F) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(G) -(C₁-C₄ alkyl)-R_{B'-aryl} where R_{B'-aryl} is as defined above for R₁.

aryl,

(H) -(C₁-C₄ alkyl)-R_{B-heteroaryl} where R_{B-heteroaryl} is as defined above,

(I) -(C₁-C₄ alkyl)-R_{B-heterocycle} where R_{B-heterocycle} is as defined above,

(J) -R_{B-heteroaryl} where R_{B-heteroaryl} is as defined above,

(K) -R_{B-heterocycle} where R_{B-heterocycle} is as defined above,

(M) -(CH₂)₁₋₄-R_{B-4}-(CH₂)₀₋₄-R_{B'-aryl} where R_{B-4} is -O-, -S- or -NR_{B-5}- where R_{B-5} is C₁-C₆ alkyl, and where R_{B'-aryl} is defined above,

(N) -(CH₂)₁₋₄-R_{B-4}-(CH₂)₀₋₄-R_{B-heteroaryl} where R_{B-4} and R_{B-heteroaryl} are as defined above, and

(O) -R_{B'-aryl} where R_{B'-aryl} is as defined above,

and where R_{B-3} is the same or different and is:

(A) -H,

(B) -C₁-C₆ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(C) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

5 (D) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

10 (E) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(F) -R_{B'-aryl} where R_{B'-aryl} is as defined above,

(G) -R_{B-heteroaryl} where R_{B-heteroaryl} is as defined above,

15 (H) -R_{B-heterocycle} where R_{B-heterocycle} is as defined above,

(I) -(C₁-C₄ alkyl)-R_{B'-aryl} where R_{B'-aryl} is as defined above,

(J) -(C₁-C₄ alkyl)-R_{B-heteroaryl} where R_{B-heteroaryl} is as defined above,

(K) -(C₁-C₄ alkyl)-R_{B-heterocycle} where R_{B-heterocycle} is as defined

above, or

20 (XVI) -CH(R_{B-aryl})₂ where R_{B-aryl} are the same or different and are as defined above,

(XVII) -CH(R_{B-heteroaryl})₂ where R_{B-heteroaryl} are the same or different and are as defined above,

25 (XVIII) -CH(R_{B-aryl})(R_{B-heteroaryl}) where R_{B-aryl} and R_{B-heteroaryl} are as defined above,

(XIX) -cyclopentyl, -cyclohexyl, or -cycloheptyl ring fused to R_{B-aryl} or R_{B-heteroaryl} or R_{B-heterocycle} where R_{B-aryl} or R_{B-heteroaryl} or R_{B-heterocycle} are as defined above where one carbon of cyclopentyl, cyclohexyl, or -cycloheptyl is optionally replaced with NH, NR_{N-5}, O, or S(=O)₀₋₂, and where cyclopentyl, cyclohexyl, or -cycloheptyl can be
30 optionally substituted with one or two -C₁-C₃ alkyl, -F, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, =O, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(XX) C₂-C₁₀ alkenyl containing one or two double bonds optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃

alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(XXI) C₂-C₁₀ alkynyl containing one or two triple bonds optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(XXI) -(CH₂)₀₋₁-CHRC₆-(CH₂)₀₋₁-RB_{B-aryl} where R_{B-aryl} is as defined above and R_{C-6} is -(CH₂)₀₋₆-OH,

(XXII) -(CH₂)₀₋₁-CHRB_{B-6}-(CH₂)₀₋₁-RB_{B-heteroaryl} where R_{B-heteroaryl} and R_{C-6} is as defined above,

(XXIII) -CH(-RB_{B-aryl} or RB_{B-heteroaryl})-CO-O(C₁-C₄ alkyl) where R_{B-aryl} and R_{B-heteroaryl} are as defined above,

(XXIV) -CH(-CH₂-OH)-CH(-OH)-micro-NO₂,

(XXV) (C₁-C₆ alkyl)-O-(C₁-C₆ alkyl)-OH,

(XXVII) -CH₂-NH-CH₂-CH(-O-CH₂-CH₃)₂,

(XXVIII) -H, or

(XXIX) -(CH₂)₀₋₆-C(=NR_{1-a})(NR_{1-a}R_{1-b}) where R_{1-a} and R_{1-b} are as defined above; and

where PROTECTING GROUP is selected from the group consisting of *t*-butoxycarbonyl, benzyloxycarbonyl, formyl, trityl, acetyl, trichloroacetyl, dichloroacetyl, chloroacetyl, trifluoroacetyl, difluoroacetyl, fluoroacetyl, 4-phenylbenzyloxycarbonyl, 2-methylbenzyloxycarbonyl, 4-ethoxybenzyloxycarbonyl, 4-fluorobenzyloxycarbonyl, 4-chlorobenzyloxycarbonyl, 3-chlorobenzyloxycarbonyl, 2-chlorobenzyloxycarbonyl, 2,4-dichlorobenzyloxycarbonyl, 4-bromobenzyloxycarbonyl, 3-bromobenzyloxycarbonyl, 4-nitrobenzyloxycarbonyl, 4-cyanobenzyloxycarbonyl, 2-(4-xenyl)isopropoxycarbonyl, 1,1-diphenyleth-1-yloxycarbonyl, 1,1-diphenylprop-1-yloxycarbonyl, 2-phenylprop-2-yloxycarbonyl, 2-(*p*-toluyl)prop-2-yloxycarbonyl, cyclopentanyloxycarbonyl, 1-methylcyclopentanyloxycarbonyl, cyclohexanyloxycarbonyl, 1-methylcyclohexanyloxycarbonyl, 2-methylcyclohexanyloxycarbonyl, 2-(4-toluylsulfonyl)ethoxycarbonyl, 2-(methylsulfonyl)ethoxycarbonyl, 2-(triphenylphosphino)ethoxycarbonyl, fluorenylmethoxycarbonyl, 2-(trimethylsilyl)ethoxycarbonyl, allyloxycarbonyl, 1-(trimethylsilylmethyl)prop-1-

enyloxycarbonyl, 5-benzisoxalylmethoxycarbonyl, 4-acetoxybenzyloxycarbonyl, 2,2,2-trichloroethoxycarbonyl, 2-ethynyl-2-propoxycarbonyl, cyclopropylmethoxycarbonyl, 4-(decyloxy)benzyloxycarbonyl, isobornyloxycarbonyl and 1-piperidyloxycarbonyl, 9-fluorenylmethyl carbonate, $-\text{CH}-\text{CH}=\text{CH}_2$ and phenyl- $\text{C}(=\text{N})-\text{H}$.

5

37. A protected compound according to claim 36

where R_1 is:

$-(\text{CH}_2)_{0-1}-(R_{1-\text{aryl}})$, or

$-(\text{CH}_2)_{n1}-(R_{1-\text{heteroaryl}})$;

10

where R_N is:

$R_{N-1}-X_N$, where X_N is selected from the group consisting of:

$-\text{CO}-$, and

$-\text{SO}_2-$,

where R_{N-1} is selected from the group consisting of:

15

$-R_{N-\text{aryl}}$, and

$-R_{N-\text{heteroaryl}}$, or

$-\text{CO}-\text{CH}((\text{CH}_2)_{0-2}-\text{O}-R_{N-10})-(\text{CH}_2)_{0-2}-R_{N-\text{aryl}}/R_{N-\text{heteroaryl}}$;

where R_A is:

$-\text{C}_1-\text{C}_8$ alkyl,

20

$-(\text{CH}_2)_{0-3}-(\text{C}_3-\text{C}_7)$ cycloalkyl,

$-(\text{CR}_{A-x}\text{R}_{A-y})_{0-4}-R_{A-\text{aryl}}$,

$-(\text{CR}_{A-x}\text{R}_{A-y})_{0-4}-R_{A-\text{heteroaryl}}$,

$-(\text{CR}_{A-x}\text{R}_{A-y})_{0-4}-R_{A-\text{heterocycle}}$,

-cyclopentyl or -cyclohexyl ring fused to $R_{A-\text{aryl}}$ or $R_{A-\text{heteroaryl}}$ or $R_{A-\text{heterocycle}}$; and

25

where R_B is:

$-\text{C}_1-\text{C}_8$ alkyl,

$-(\text{CH}_2)_{0-3}-(\text{C}_3-\text{C}_7)$ cycloalkyl,

$-(\text{CR}_{A-x}\text{R}_{A-y})_{0-4}-R_{A-\text{aryl}}$,

30

$-(\text{CR}_{A-x}\text{R}_{A-y})_{0-4}-R_{A-\text{heteroaryl}}$,

$-(\text{CR}_{A-x}\text{R}_{A-y})_{0-4}-R_{A-\text{heterocycle}}$,

-cyclopentyl or -cyclohexyl ring fused to $R_{A-\text{aryl}}$ or $R_{A-\text{heteroaryl}}$ or $R_{A-\text{heterocycle}}$.

38. A protected compound according to claim 37

where R_1 is:

$-(CH_2)-(R_{1-aryl})$, or

$-(CH_2)-(R_{1-heteroaryl})$;

where R_2 is $-H$;

5 where R_3 is $-H$;

where R_N is:

$R_{N-1}-X_N$ - where X_N is:

$-CO-$,

where R_{N-1} is selected from the group consisting of:

10 $-R_{N-aryl}$, and

$-R_{N-heteroaryl}$;

where R_A is:

$-C_1-C_8$ alkyl,

$-(CH_2)_{0-3}-(C_3-C_7)$ cycloalkyl,

15 $-(CR_{A-x}R_{A-y})_{0-4}-R_{A-aryl}$,

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heteroaryl}$,

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heterocycle}$,

$-cyclopentyl$ or $-cyclohexyl$ ring fused to R_{A-aryl} or $R_{A-heteroaryl}$ or R_{A-}

heterocycle;

20 where R_B is:

$-C_1-C_8$ alkyl,

$-(CH_2)_{0-3}-(C_3-C_7)$ cycloalkyl,

$-(CR_{B-x}R_{B-y})_{0-4}-R_{B-aryl}$,

$-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heteroaryl}$,

25 $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heterocycle}$,

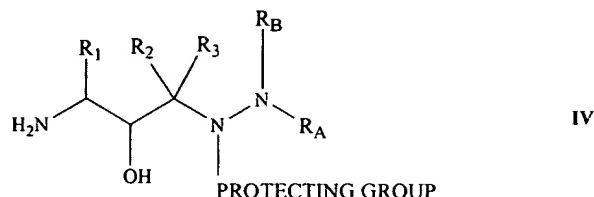
$-cyclopentyl$ or $-cyclohexyl$ ring fused to R_{B-aryl} or $R_{B-heteroaryl}$ or R_{B-}

heterocycle.

39. A protected compound according to claim 36 where PROTECTING GROUP is *t*-
30 butoxycarbonyl.

40. A protected compound according to claim 36 where PROTECTING GROUP is
benzyloxycarbonyl.

41. A protected compound of the formula (IV)



5 where R_1 is:

(I) C_1 - C_6 alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1 - C_3 alkyl, C_1 - C_7 alkyl (optionally substituted with C_1 - C_3 alkyl and C_1 - C_3 alkoxy), -F, -Cl, -Br, -I, -OH, -SH, -C \equiv N, -CF $_3$, C_1 - C_3 alkoxy, -NR $_{1-a}$ R $_{1-b}$ where R $_{1-a}$ and R $_{1-b}$ are -H or C_1 - C_6 alkyl, and -OC=O NR $_{1-a}$ R $_{1-b}$ where R $_{1-a}$ and R $_{1-b}$ are as defined above,

(II) -CH $_2$ -S(O) $_{0-2}$ -(C_1 - C_6 alkyl),

(III) -CH $_2$ -CH $_2$ -S(O) $_{0-2}$ -(C_1 - C_6 alkyl),

(IV) C_2 - C_6 alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C \equiv N, -CF $_3$, C_1 - C_3 alkoxy, and -NR $_{1-a}$ R $_{1-b}$ where R $_{1-a}$ and R $_{1-b}$ are -H or C_1 - C_6 alkyl,

(V) C_2 - C_6 alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C \equiv N, -CF $_3$, C_1 - C_3 alkoxy, and -NR $_{1-a}$ R $_{1-b}$ where R $_{1-a}$ and R $_{1-b}$ are -H or C_1 - C_6 alkyl,

(VI) -(CH $_2$) $_{n_1}$ -(R $_{1-aryl}$) where n_1 is zero or one and where R $_{1-aryl}$ is phenyl, 1-naphthyl, 2-naphthyl and indanyl, indenyl, dihydronaphthalyl, or tetralinyl optionally substituted with one, two, three or four of the following substituents on the aryl ring:

(A) C_1 - C_6 alkyl optionally substituted with one, two or three substituents selected from the group consisting of C_1 - C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C \equiv N, -CF $_3$, and C_1 - C_3 alkoxy, and -NR $_{1-a}$ R $_{1-b}$ where R $_{1-a}$ and R $_{1-b}$ are as defined above,

(B) C_2 - C_6 alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C \equiv N, -CF $_3$, C_1 - C_3 alkoxy, and -NR $_{1-a}$ R $_{1-b}$ where R $_{1-a}$ and R $_{1-b}$ are -H or C_1 - C_6 alkyl,

(C) C_2 - C_6 alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -

Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(D) -F, Cl, -Br or -I,

(F) -C₁-C₆ alkoxy optionally substituted with one, two or three of

5 - F,

(G) -NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are as defined below,

(H) -OH,

(I) -C≡N,

(J) C₃-C₇ cycloalkyl, optionally substituted with one, two or three
10 substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(K) -CO-(C₁-C₄ alkyl),

(L) -SO₂-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(M) -CO-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, or

15 (N) -SO₂-(C₁-C₄ alkyl),

(VII) -(CH₂)_{n1}-(R_{1-heteroaryl}) where n₁ is as defined above and where R_{1-heteroaryl} is selected from the group consisting of:

pyridinyl,

pyrimidinyl,

20 quinolinyl,

benzothienyl,

indolyl,

indolinyl,

pyridazinyl,

25 pyrazinyl,

isoquinolyl,

quinazolinyl,

quinoxalinyl,

phthalazinyl,

30 imidazolyl,

isoxazolyl,

pyrazolyl,

oxazolyl,

thiazolyl,
indolizinyI,
indazolyl,
benzothiazolyl,
5 benzimidazolyl,
benzofuranyl,
furanyl,
thienyl,
pyrrolyl,
10 oxadiazolyl,
thiadiazolyl,
triazolyl,
tetrazolyl,
oxazolopyridinyl,
15 imidazopyridinyl,
isothiazolyl,
naphthyridinyl,
cinnolinyI,
carbazolyl,
20 beta-carbolinyl,
isochromanyl,
chromanyl,
tetrahydroisoquinolinyI,
isoindolinyI,
25 isobenzotetrahydrofuranyl,
isobenzotetrahydrothienyl,
isobenzothieryl,
benzoxazolyl,
pyridopyridinyl,
30 benzotetrahydrofuranyl,
benzotetrahydrothienyl,
purinyl,
benzodioxolyl,
triazinyl,

phenoxazinyl,
phenothiazinyl,
pteridinyl,
benzothiazolyl,
5 imidazopyridinyl,
imidazothiazolyl,
dihydrobenzisoaxazinyl,
benzisoaxazinyl,
benzoxazinyl,
10 dihydrobenzisothiazinyl,
benzopyranyl,
benzothiopyranyl,
coumarinyl,
isocoumarinyl,
15 chromonyl,
chromanonyl,
pyridinyl-N-oxide,
tetrahydroquinolinyl
dihydroquinolinyl
20 dihydroquinolinonyl
dihydroisoquinolinonyl
dihydrocoumarinyl
dihydroisocoumarinyl
isoindolinonyl
25 benzodioxanyl
benzoxazolinonyl
pyrrolyl N-oxide,
pyrimidinyl N-oxide,
pyridazinyl N-oxide,
30 pyrazinyl N-oxide,
quinolinyl N-oxide,
indolyl N-oxide,
indolinyl N-oxide,
isoquinolyl N-oxide,

quinazoliny N-oxide,
 quinoxaliny N-oxide,
 phthalaziny N-oxide,
 imidazolyl N-oxide,
 5 isoxazolyl N-oxide,
 oxazolyl N-oxide,
 thiazolyl N-oxide,
 indoliziny N-oxide,
 indazolyl N-oxide,
 10 benzothiazolyl N-oxide,
 benzimidazolyl N-oxide,
 pyrrolyl N-oxide,
 oxadiazolyl N-oxide,
 thiadiazolyl N-oxide,
 15 triazolyl N-oxide,
 tetrazolyl N-oxide,
 benzothiopyranyl S-oxide, and
 benzothiopyranyl S,S-dioxide,

where the $R_{1\text{-heteroaryl}}$ group is bonded to $-(CH_2)_{n1}-$ by any ring atom of the
 20 parent $R_{1\text{-heteroaryl}}$ group substituted by hydrogen such that the new bond to the $R_{1\text{-heteroaryl}}$
 group replaces the hydrogen atom and its bond, where heteroaryl is optionally substituted
 with one, two, three or four of:

(1) C_1-C_6 alkyl optionally substituted with one, two or three
 substituents selected from the group consisting of C_1-C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH,
 25 $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(2) C_2-C_6 alkenyl with one or two double bonds, optionally
 substituted with one, two or three substituents selected from the group consisting of -F, -
 Cl, -OH, -SH, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are -H or C_1-
 C_6 alkyl,

30 (3) C_2-C_6 alkynyl with one or two triple bonds, optionally
 substituted with one, two or three substituents selected from the group consisting of -F, -
 Cl, -OH, -SH, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are -H or C_1-
 C_6 alkyl,

(4) -F, Cl, -Br or -I,
(6) -C₁-C₆ alkoxy optionally substituted with one, two, or
three of -F,

5 (7) -NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are as defined below,

(8) -OH,

(9) -C≡N,

(10) C₃-C₇ cycloalkyl, optionally substituted with one, two
or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃,
C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

10 (11) -CO-(C₁-C₄ alkyl),

(12) -SO₂-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined
above,

(13) -CO-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined
above, or

15 (14) -SO₂-(C₁-C₄ alkyl), with the proviso that when n₁ is
zero R_{1-heteroaryl} is not bonded to the carbon chain by nitrogen; or

(VIII) -(CH₂)_{n1}-(R_{1-heterocycle}) where n₁ is as defined above and R_{1-heterocycle}
is selected from the group consisting of:

20 morpholinyl,
thiomorpholinyl,
thiomorpholinyl S-oxide,
thiomorpholinyl S,S-dioxide,
piperazinyl,
homopiperazinyl,
25 pyrrolidinyl,
pyrrolinyl,
tetrahydropyranyl,
piperidinyl,
tetrahydrofuranyl,
30 tetrahydrothienyl,
homopiperidinyl,
homomorpholinyl,
homothiomorpholinyl,

5

10

homothiomorpholinyl S-oxide,

15

heterocycle group substituted by hydrogen such that the new bond to the R₁-heterocycle group replaces the hydrogen atom and its bond, where heterocycle is optionally substituted with one, two, three or four:

20

(2) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(3) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

30

(4) -F, Cl, -Br or -I,

(5) C₁-C₆ alkoxy,

three -F,

(7) $-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are as defined below.

(8) $-\text{OH}$,

- (9) $-C\equiv N$,
 (10) C_3-C_7 cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of $-F$, $-Cl$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are $-H$ or C_1-C_6 alkyl,
 5 (11) $-CO-(C_1-C_4 \text{ alkyl})$,
 (12) $-SO_2-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,
 (13) $-CO-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,
 10 (14) $-SO_2-(C_1-C_4 \text{ alkyl})$, or
 (15) $=O$, with the proviso that when n_1 is zero $R_{1-\text{heterocycle}}$ is not bonded to the carbon chain by nitrogen;

where R_2 is:

- 15 (I) $-H$,
 (II) C_1-C_6 alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,
 (III) $-(CH_2)_{0-4}-R_{2-1}$ where R_{2-1} is $R_{1-\text{aryl}}$ or $R_{1-\text{heteroaryl}}$ where $R_{1-\text{aryl}}$ and $R_{1-\text{heteroaryl}}$ are as defined above;
 20 (IV) C_2-C_6 alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of $-F$, $-Cl$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are $-H$ or C_1-C_6 alkyl,
 (V) C_2-C_6 alkynyl with one or two triple bonds, optionally substituted with
 25 one, two or three substituents selected from the group consisting of $-F$, $-Cl$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are $-H$ or C_1-C_6 alkyl, or
 (VI) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of $-F$, $-Cl$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are $-H$ or C_1-C_6 alkyl;

30

where R_3 is:

- (I) $-H$,

(II) C₁-C₆ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(III) -(CH₂)₀₋₄-R₂₋₁ where R₂₋₁ is R_{1-aryl} or R_{1-heteroaryl} where R_{1-aryl} and R_{1-heteroaryl} are as defined above

(IV) C₂-C₆ alkenyl with one or two double bonds,

(V) C₂-C₆ alkynyl with one or two triple bonds; or

(VI) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

and where R₂ and R₃ are taken together with the carbon to which they are attached to form a carbocycle of three, four, five, six, or seven carbon atoms, optionally where one carbon atom is replaced by a heteroatom selected from the group consisting of -O-, -S-, -SO₂-, and -NR_{N-2}-, where R_{N-2} is selected from the group consisting of:

(a) -H,

(b) -C₁-C₆ alkyl optionally substituted with one substituent selected from the group consisting of:

(i) -OH, and

(ii) -NH₂,

(c) -C₁-C₆ alkyl optionally substituted with one, two, or three -F, -Cl, -Br, or -I,

(d) -C₃-C₇ cycloalkyl,

(e) -(C₁-C₂ alkyl)-(C₃-C₇ cycloalkyl),

(f) -(C₁-C₆ alkyl)-O-(C₁-C₃ alkyl),

(g) -C₂-C₆ alkenyl with one or two double bonds,

(h) -C₂-C₆ alkynyl with one or two triple bonds,

(i) -C₁-C₆ alkyl chain with one double bond and one triple bond,

(j) -R_{1-aryl} where R_{1-aryl} is as defined above, and

(k) -R_{1-heteroaryl} where R_{1-heteroaryl} is as defined above;

where R_N is:

(I) R_{N-1}-X_N- where X_N is selected from the group consisting of:

- (A) $-\text{CO}-$,
 (B) $-\text{SO}_2-$,
 (C) $-(\text{CR}'\text{R}'')_{1-6}$ where R' and R'' are the same or different and are $-\text{H}$ and $\text{C}_1\text{-C}_4$ alkyl,

5 (D) $-\text{CO}-(\text{CR}'\text{R}'')_{1-6}-\text{X}_{\text{N}-1}$ where $\text{X}_{\text{N}-1}$ is selected from the group consisting of $-\text{O}-$, $-\text{S}-$ and $-\text{NR}'-$ and where R' and R'' are as defined above, and

(E) a single bond;

where $\text{R}_{\text{N}-1}$ is selected from the group consisting of:

(A) $\text{R}_{\text{N-aryl}}$ where $\text{R}_{\text{N-aryl}}$ is phenyl, 1-naphthyl, 2-naphthyl,
 10 tetralinyl, indanyl, 6,7,8,9-tetrahydro-5H-benzo[a]cycloheptenyl, or dihydronaphthyl optionally substituted with one, two or three of the following substituents which can be the same or different and are:

(1) $\text{C}_1\text{-C}_6$ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$,
 15 $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, $\text{C}_1\text{-C}_3$ alkoxy, and $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(2) $-\text{OH}$,

(3) $-\text{NO}_2$,

(4) $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$,

20 (5) $-\text{CO}-\text{OH}$,

(6) $-\text{C}\equiv\text{N}$,

(7) $-(\text{CH}_2)_{0-4}-\text{CO}-\text{NR}_{\text{N}-2}\text{R}_{\text{N}-3}$ where $\text{R}_{\text{N}-2}$ and $\text{R}_{\text{N}-3}$ are the same or different and are selected from the group consisting of:

(a) $-\text{H}$,

25 (b) $-\text{C}_1\text{-C}_6$ alkyl optionally substituted with one substituent selected from the group consisting of:

(i) $-\text{OH}$, and

(ii) $-\text{NH}_2$,

(c) $-\text{C}_1\text{-C}_6$ alkyl optionally substituted with one,
 30 two, or three $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, or $-\text{I}$,

(d) $-\text{C}_3\text{-C}_7$ cycloalkyl,

(e) $-(\text{C}_1\text{-C}_2 \text{ alkyl})-(\text{C}_3\text{-C}_7 \text{ cycloalkyl})$,

(f) $-(\text{C}_1\text{-C}_6 \text{ alkyl})-\text{O}-(\text{C}_1\text{-C}_3 \text{ alkyl})$,

- (g) $-C_2-C_6$ alkenyl with one or two double bonds,
(h) $-C_2-C_6$ alkynyl with one or two triple bonds,
(i) $-C_1-C_6$ alkyl chain with one double bond and one
triple bond,
5 (j) $-R_{1-aryl}$ where R_{1-aryl} is as defined above, and
(k) $-R_{1-heteroaryl}$ where $R_{1-heteroaryl}$ is as defined above,
(8) $-(CH_2)_{0-4}-CO-(C_1-C_{12}$ alkyl),
(9) $-(CH_2)_{0-4}-CO-(C_2-C_{12}$ alkenyl with one, two or three
double bonds),
10 (10) $-(CH_2)_{0-4}-CO-(C_2-C_{12}$ alkynyl with one, two or three
triple bonds),
(11) $-(CH_2)_{0-4}-CO-(C_3-C_7$ cycloalkyl),
(12) $-(CH_2)_{0-4}-CO-R_{1-aryl}$ where R_{1-aryl} is as defined above,
(13) $-(CH_2)_{0-4}-CO-R_{1-heteroaryl}$ where $R_{1-heteroaryl}$ is as defined
15 above,
(14) $-(CH_2)_{0-4}-CO-R_{1-heterocycle}$ where $R_{1-heterocycle}$ is as
defined above,
(15) $-(CH_2)_{0-4}-CO-R_{N-4}$ where R_{N-4} is selected from the
group consisting of morpholinyl, thiomorpholinyl, piperazinyl, piperidinyl,
20 homomorpholinyl, homothiomorpholinyl, homothiomorpholinyl S-oxide,
homothiomorpholinyl S,S-dioxide, pyrrolinyl and pyrrolidinyl where each group is
optionally substituted with one, two, three, or four of C_1-C_6 alkyl,
(16) $-(CH_2)_{0-4}-CO-O-R_{N-5}$ where R_{N-5} is selected from the
group consisting of:
25 (a) C_1-C_6 alkyl,
(b) $-(CH_2)_{0-2}-(R_{1-aryl})$ where R_{1-aryl} is as defined
above,
(c) C_2-C_6 alkenyl containing one or two double
bonds,
30 (d) C_2-C_6 alkynyl containing one or two triple
bonds,
(e) C_3-C_7 cycloalkyl, and
(f) $-(CH_2)_{0-2}-(R_{1-heteroaryl})$ where $R_{1-heteroaryl}$ is as
defined above,

(17) $-(CH_2)_{0-4}-SO_2-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are as defined above,

(18) $-(CH_2)_{0-4}-SO-(C_1-C_8 \text{ alkyl})$,

(19) $-(CH_2)_{0-4}-SO_2-(C_1-C_{12} \text{ alkyl})$,

5 (20) $-(CH_2)_{0-4}-SO_2-(C_3-C_7 \text{ cycloalkyl})$,

(21) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-O-R_{N-5}$ where R_{N-5} can be the same or different and is as defined above,

(22) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-N(R_{N-5})_2$, where R_{N-5} can be the same or different and is as defined above,

10 (23) $-(CH_2)_{0-4}-N-CS-N(R_{N-5})_2$, where R_{N-5} can be the same or different and is as defined above,

(24) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-R_{N-2}$ where R_{N-5} and R_{N-2} can be the same or different and are as defined above,

(25) $-(CH_2)_{0-4}-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} can be the same or different and are as defined above,

(26) $-(CH_2)_{0-4}-R_{N-4}$ where R_{N-4} is as defined above,

(27) $-(CH_2)_{0-4}-O-CO-(C_1-C_6 \text{ alkyl})$,

(28) $-(CH_2)_{0-4}-O-P(O)-(OR_{N-aryl-1})_2$ where $R_{N-aryl-1}$ is $-H$ or $C_1-C_4 \text{ alkyl}$,

20 (29) $-(CH_2)_{0-4}-O-CO-N(R_{N-5})_2$ where R_{N-5} is as defined above,

(30) $-(CH_2)_{0-4}-O-CS-N(R_{N-5})_2$ where R_{N-5} is as defined above,

(31) $-(CH_2)_{0-4}-O-(R_{N-5})_2$ where R_{N-5} is as defined above,

25 (32) $-(CH_2)_{0-4}-O-(R_{N-5})_2-COOH$ where R_{N-5} is as defined above,

(33) $-(CH_2)_{0-4}-S-(R_{N-5})_2$ where R_{N-5} is as defined above,

(34) $-(CH_2)_{0-4}-O-(C_1-C_6 \text{ alkyl optionally substituted with one, two, three, four, or five of } -F)$,

30 (35) $C_3-C_7 \text{ cycloalkyl}$,

(36) $C_2-C_6 \text{ alkenyl with one or two double bonds optionally substituted with } C_1-C_3 \text{ alkyl, } -F, -Cl, -Br, -I, -OH, -SH, -C\equiv N, -CF_3, C_1-C_3 \text{ alkoxy, or } -NR_{1-a}R_{1-b} \text{ where } R_{1-a} \text{ and } R_{1-b} \text{ are as defined above,}$

(37) C₂-C₆ alkynyl with one or two triple bonds optionally substituted with C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(38) -(CH₂)₀₋₄-N(-H or R_{N-5})-SO₂-R_{N-2} where R_{N-5} and R_{N-2} can be the same or different and are as described above, or

(39) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl,

(B) -R_{N-heteroaryl} where R_{N-heteroaryl} is selected from the group consisting of:

10 pyridinyl,
pyrimidinyl,
quinolinyl,
benzothienyl,
indolyl,
indolinyl,
15 pyridazinyl,
pyrazinyl,
isoindolyl,
isoquinolyl,
quinazolinyl,
20 quinoxalinyl,
phthalazinyl,
imidazolyl,
isoxazolyl,
pyrazolyl,
25 oxazolyl,
thiazolyl,
indolizinyl,
indazolyl,
benzothiazolyl,
30 benzimidazolyl,
benzofuranyl,
furanyl,
thienyl,

5

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pyrrolyl,
oxadiazolyl,
thiadiazolyl,
triazolyl,
tetrazolyl,
oxazolopyridinyl,
imidazopyridinyl,
isothiazolyl,
naphthyridinyl,
cinnolinyl,
carbazolyl,
beta-carbolinyl,
isochromanyl,
chromanyl,
tetrahydroisoquinolinyl,
isoindolinyl,
isobenzotetrahydrofuranyl,
isobenzotetrahydrothienyl,
isobenzothienyl,
benzoxazolyl,
pyridopyridinyl,
benzotetrahydrofuranyl,
benzotetrahydrothienyl,
purinyl,
benzodioxolyl,
triazinyl,
phenoxazinyl,
phenothiazinyl,
pteridinyl,
benzothiazolyl,
imidazopyridinyl,
imidazothiazolyl,
dihydrobenzisoxazinyl,
benzisoxazinyl,

5 benzoxazinyl,
dihydrobenzothiazinyl,
benzopyranyl,
benzothiopyranyl,
coumarinyl,
isocoumarinyl,
chromonyl,
chromanonyl,
10 pyridinyl-N-oxide,
tetrahydroquinolinyl,
dihydroquinolinyl,
dihydroquinolinonyl,
dihydroisoquinolinonyl,
15 dihydrocoumarinyl,
dihydroisocoumarinyl,
isoindolinonyl,
benzodioxanyl,
benzoxazolinonyl,
20 pyrrolyl N-oxide,
pyrimidinyl N-oxide,
pyridazinyl N-oxide,
pyrazinyl N-oxide,
quinolinyl N-oxide,
indolyl N-oxide,
25 indolinyl N-oxide,
isoquinolyl N-oxide,
quinazolinyl N-oxide,
quinoxaliny N-oxide,
phthalazinyl N-oxide,
30 imidazolyl N-oxide,
isoxazolyl N-oxide,
oxazolyl N-oxide,
thiazolyl N-oxide,
indoliziny N-oxide,

5

10

indazolyl N-oxide,
 benzothiazolyl N-oxide,
 benzimidazolyl N-oxide,
 pyrrolyl N-oxide,
 oxadiazolyl N-oxide,
 thiadiazolyl N-oxide,
 triazolyl N-oxide,
 tetrazolyl N-oxide,
 benzothiopyranyl S-oxide, and
 benzothiopyranyl S,S-dioxide

where the $R_{N\text{-heteroaryl}}$ group is bonded by any atom of the parent R_N -heteroaryl group substituted by hydrogen such that the new bond to the $R_{N\text{-heteroaryl}}$ group replaces the hydrogen atom and its bond, where heteroaryl is optionally substituted with one, two, three, or four of:

15

(1) C_1 - C_6 alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1 - C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, $-C\equiv N$, $-CF_3$, C_1 - C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

20

- (2) -OH,
- (3) $-NO_2$,
- (4) -F, -Cl, -Br, or -I,
- (5) $-CO-OH$,
- (6) $-C\equiv N$,

25

(7) $-(CH_2)_{0-4}-CO-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are selected from the group consisting of:

- (a) -H,
- (b) $-C_1$ - C_6 alkyl optionally substituted with one substituent selected from the group consisting of:

30

- (i) -OH, and
- (ii) $-NH_2$,
- (c) $-C_1$ - C_6 alkyl optionally substituted with one, two, or three -F, -Cl, -Br, -I,
- (d) $-C_3$ - C_7 cycloalkyl,

- (e) $-(C_1-C_2 \text{ alkyl})-(C_3-C_7 \text{ cycloalkyl})$,
(f) $-(C_1-C_6 \text{ alkyl})-O-(C_1-C_3 \text{ alkyl})$,
(g) $-C_2-C_6 \text{ alkenyl}$ with one or two double bonds,
(h) $-C_2-C_6 \text{ alkynyl}$ with one or two triple bonds,
5 (i) $-C_1-C_6 \text{ alkyl chain}$ with one double bond and one triple bond,
(j) $-R_{1\text{-aryl}}$ where $R_{1\text{-aryl}}$ is as defined above,
(k) $-R_{1\text{-heteroaryl}}$ where $R_{1\text{-heteroaryl}}$ is as defined above,
(8) $-(CH_2)_{0-4}-CO-(C_1-C_{12} \text{ alkyl})$,
10 (9) $-(CH_2)_{0-4}-CO-(C_2-C_{12} \text{ alkenyl}$ with one, two or three double bonds),
(10) $-(CH_2)_{0-4}-CO-(C_2-C_{12} \text{ alkynyl}$ with one, two or three triple bonds),
(11) $-(CH_2)_{0-4}-CO-(C_3-C_7 \text{ cycloalkyl})$,
15 (12) $-(CH_2)_{0-4}-CO-R_{1\text{-aryl}}$ where $R_{1\text{-aryl}}$ is as defined above,
(13) $-(CH_2)_{0-4}-CO-R_{1\text{-heteroaryl}}$ where $R_{1\text{-heteroaryl}}$ is as defined above,
(14) $-(CH_2)_{0-4}-CO-R_{1\text{-heterocycle}}$ where $R_{1\text{-heterocycle}}$ is as defined above,
20 (15) $-(CH_2)_{0-4}-CO-R_{N-4}$ where R_{N-4} is selected from the group consisting of morpholinyl, thiomorpholinyl, piperazinyl, piperidinyl, homomorpholinyl, homothiomorpholinyl, homothiomorpholinyl S-oxide, homothiomorpholinyl S,S-dioxide, pyrrolinyl and pyrrolidinyl where each group is optionally substituted with one, two, three, or four of $C_1-C_6 \text{ alkyl}$,
25 (16) $-(CH_2)_{0-4}-CO-O-R_{N-5}$ where R_{N-5} is selected from the group consisting of:
(a) $C_1-C_6 \text{ alkyl}$,
(b) $-(CH_2)_{0-2}-(R_{1\text{-aryl}})$ where $R_{1\text{-aryl}}$ is as defined above,
30 (c) $C_2-C_6 \text{ alkenyl}$ containing one or two double bonds,
(d) $C_2-C_6 \text{ alkynyl}$ containing one or two triple bonds,
(e) $C_3-C_7 \text{ cycloalkyl}$, and

(f) $-(\text{CH}_2)_{0-2}-(\text{R}_{1-\text{heteroaryl}})$ where $\text{R}_{1-\text{heteroaryl}}$ is as defined above,

(17) $-(\text{CH}_2)_{0-4}-\text{SO}_2-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are as defined above,

5 (18) $-(\text{CH}_2)_{0-4}-\text{SO}-(\text{C}_1-\text{C}_8 \text{ alkyl})$,

(19) $-(\text{CH}_2)_{0-4}-\text{SO}_2-(\text{C}_1-\text{C}_{12} \text{ alkyl})$,

(20) $-(\text{CH}_2)_{0-4}-\text{SO}_2-(\text{C}_3-\text{C}_7 \text{ cycloalkyl})$,

(21) $-(\text{CH}_2)_{0-4}-\text{N}(\text{H or } \text{R}_{\text{N-5}})-\text{CO}-\text{O}-\text{R}_{\text{N-5}}$ where $\text{R}_{\text{N-5}}$ can be the same or different and is as defined above,

10 (22) $-(\text{CH}_2)_{0-4}-\text{N}(\text{H or } \text{R}_{\text{N-5}})-\text{CO}-\text{N}(\text{R}_{\text{N-5}})_2$, where $\text{R}_{\text{N-5}}$ can be the same or different and is as defined above,

(23) $-(\text{CH}_2)_{0-4}-\text{N}-\text{CS}-\text{N}(\text{R}_{\text{N-5}})_2$, where $\text{R}_{\text{N-5}}$ can be the same or different and is as defined above,

(24) $-(\text{CH}_2)_{0-4}-\text{N}(\text{H or } \text{R}_{\text{N-5}})-\text{CO}-\text{R}_{\text{N-2}}$ where $\text{R}_{\text{N-5}}$ and $\text{R}_{\text{N-2}}$ can be the same or different and are as defined above,

15 (25) $-(\text{CH}_2)_{0-4}-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ can be the same or different and are as defined above,

(26) $-(\text{CH}_2)_{0-4}-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(27) $-(\text{CH}_2)_{0-4}-\text{O}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

20 (28) $-(\text{CH}_2)_{0-4}-\text{O}-\text{P}(\text{O})-(\text{OR}_{\text{N-aryl-1}})_2$ where $\text{R}_{\text{N-aryl-1}}$ is $-\text{H}$ or $\text{C}_1-\text{C}_4 \text{ alkyl}$,

(29) $-(\text{CH}_2)_{0-4}-\text{O}-\text{CO}-\text{N}(\text{R}_{\text{N-5}})_2$ where $\text{R}_{\text{N-5}}$ is as defined above,

25 (30) $-(\text{CH}_2)_{0-4}-\text{O}-\text{CS}-\text{N}(\text{R}_{\text{N-5}})_2$ where $\text{R}_{\text{N-5}}$ is as defined above,

(31) $-(\text{CH}_2)_{0-4}-\text{O}-(\text{R}_{\text{N-5}})_2$ where $\text{R}_{\text{N-5}}$ is as defined above,

(32) $-(\text{CH}_2)_{0-4}-\text{O}-(\text{R}_{\text{N-5}})_2-\text{COOH}$ where $\text{R}_{\text{N-5}}$ is as defined above,

30 (33) $-(\text{CH}_2)_{0-4}-\text{S}-(\text{R}_{\text{N-5}})_2$ where $\text{R}_{\text{N-5}}$ is as defined above,

(34) $-(\text{CH}_2)_{0-4}-\text{O}-(\text{C}_1-\text{C}_6 \text{ alkyl})$ optionally substituted with one, two, three, four, or five of $-\text{F}$),

(35) $\text{C}_3-\text{C}_7 \text{ cycloalkyl}$,

(36) C₂-C₆ alkenyl with one or two double bonds optionally substituted with C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(37) C₂-C₆ alkynyl with one or two triple bonds optionally substituted with C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(38) -(CH₂)₀₋₄-N(-H or R_{N-5})-SO₂-R_{N-2} where R_{N-5} and R_{N-2} can be the same or different and are as defined above, or

(39) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl,

(C) R_{N-aryl}-W-R_{N-aryl}, where R_{N-aryl} can be the same or different,

(D) R_{N-aryl}-W-R_{N-heteroaryl},

(E) R_{N-aryl}-W-R_{N-1-heterocycle}, wherein R_{N-1-heterocycle} is the same as R_{1-heterocycle}, and R_{1-heterocycle} is as defined above

(F) R_{N-heteroaryl}-W-R_{N-aryl},

(G) R_{N-heteroaryl}-W-R_{N-heteroaryl},

(H) R_{N-heteroaryl}-W-R_{N-1-heterocycle},

(I) R_{N-heterocycle}-W-R_{N-aryl}, wherein R_{N-heterocycle} is the same as R_{1-heterocycle}, and R_{1-heterocycle} is as defined above, and R_{N-aryl} is as defined above,

(J) R_{N-heterocycle}-W-R_{N-heteroaryl}, and

(K) R_{N-heterocycle}-W-R_{N-1-heterocycle},

where W is

(13) -(CH₂)₀₋₄-,

(14) -O-,

(15) -S(O)₀₋₂-,

(16) -N(R_{N-5})- where R_{N-5} is as defined above, or

(5) -CO-;

(II) -CO-(C₁-C₁₀ alkyl) where alkyl is optionally substituted with one three substituents selected from the group consisting of:

(A) -OH,

(B) -C₁-C₆ alkoxy,

(C) -C₁-C₆ thioalkoxy,

(D) -CO-O-R_{N-8} where R_{N-8} is -H, C₁-C₆ alkyl or -phenyl,

(E) $-\text{CO}-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(F) $-\text{CO}-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(G) $-\text{SO}_2-(\text{C}_1-\text{C}_8 \text{ alkyl})$,

5 (H) $-\text{SO}_2-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(I) $-\text{NH}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

(J) $-\text{NH}-\text{CO}-\text{O}-\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is as defined above,

(K) $-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and
10 are as defined above,

(L) $-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(M) $-\text{O}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

(N) $-\text{O}-\text{CO}-\text{NR}_{\text{N-8}}\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ are the same or different and are
as defined above,

15 (O) $-\text{O}-(\text{C}_1-\text{C}_5 \text{ alkyl})-\text{COOH}$,

(P) $-\text{O}-(\text{C}_1-\text{C}_6 \text{ alkyl})$ optionally substituted with one, two, or three of
-F, -Cl, -Br, or -I),

(Q) $-\text{NH}-\text{SO}_2-(\text{C}_1-\text{C}_6 \text{ alkyl})$, and

(R) -F, or -Cl,

20 (III) $-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})-\text{O}-(\text{C}_1-\text{C}_6 \text{ alkyl})$ where alkyl is optionally substituted with one, two, or three substituents selected from the group consisting of:

(A) -OH,

(B) $-\text{C}_1-\text{C}_6 \text{ alkoxy}$,

(C) $-\text{C}_1-\text{C}_6 \text{ thioalkoxy}$,

25 (D) $-\text{CO}-\text{O}-\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is -H, $\text{C}_1-\text{C}_6 \text{ alkyl}$ or -phenyl,

(E) $-\text{CO}-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different
and are as defined above,

(F) $-\text{CO}-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(G) $-\text{SO}_2-(\text{C}_1-\text{C}_8 \text{ alkyl})$,

30 (H) $-\text{SO}_2-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different
and are as defined above,

(I) $-\text{NH}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

(J) $-\text{NH}-\text{CO}-\text{O}-\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is as defined above,

(K) $-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(L) $-R_{N-4}$ where R_{N-4} is as defined above,

(M) $-O-CO-(C_1-C_6 \text{ alkyl})$,

5 (N) $-O-CO-NR_{N-8}R_{N-8}$ where R_{N-8} are the same or different and are as defined above,

(O) $-O-(C_1-C_5 \text{ alkyl})-COOH$,

(P) $-O-(C_1-C_6 \text{ alkyl})$ optionally substituted with one, two, or three of -F, -Cl, -Br, or -I),

10 (Q) $-NH-SO_2-(C_1-C_6 \text{ alkyl})$, and

(R) -F, or -Cl,

(IV) $-CO-(C_1-C_6 \text{ alkyl})-S-(C_1-C_6 \text{ alkyl})$ where alkyl is optionally substituted with one, two, or three of substituents selected from the group consisting of:

(A) -OH,

15 (B) $-C_1-C_6 \text{ alkoxy}$,

(C) $-C_1-C_6 \text{ thioalkoxy}$,

(D) $-CO-O-R_{N-8}$ where R_{N-8} is as defined above,

(E) $-CO-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

20 (F) $-CO-R_{N-4}$ where R_{N-4} is as defined above,

(G) $-SO_2-(C_1-C_8 \text{ alkyl})$,

(H) $-SO_2-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(I) $-NH-CO-(C_1-C_6 \text{ alkyl})$,

25 (J) $-NH-CO-O-R_{N-8}$ where R_{N-8} is as defined above,

(K) $-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(L) $-R_{N-4}$ where R_{N-4} is as defined above,

(M) $-O-CO-(C_1-C_6 \text{ alkyl})$,

30 (N) $-O-CO-NR_{N-8}R_{N-8}$ where R_{N-8} are the same or different and are as defined above,

(O) $-O-(C_1-C_5 \text{ alkyl})-COOH$,

(P) $-\text{O}-(\text{C}_1\text{-C}_6 \text{ alkyl optionally substituted with one, two, or three of } -\text{F}, -\text{Cl}, -\text{Br}, \text{ or } -\text{I}),$

(Q) $-\text{NH-SO}_2-(\text{C}_1\text{-C}_6 \text{ alkyl}),$ and

(R) $-\text{F},$ or $-\text{Cl},$

5 (V) $-\text{CO-CH}(-(\text{CH}_2)_{0-2}-\text{O-R}_{\text{N-10}})-(\text{CH}_2)_{0-2}-\text{R}_{\text{N-aryl}}/\text{R}_{\text{N-heteroaryl}}$ where $\text{R}_{\text{N-aryl}}$ and $\text{R}_{\text{N-heteroaryl}}$ are as defined above, where $\text{R}_{\text{N-10}}$ is selected from the group consisting of:

(A) $-\text{H},$

(B) $\text{C}_1\text{-C}_6 \text{ alkyl},$

(C) $\text{C}_3\text{-C}_7 \text{ cycloalkyl},$

10 (D) $\text{C}_2\text{-C}_6 \text{ alkenyl with one double bond},$

(E) $\text{C}_2\text{-C}_6 \text{ alkynyl with one triple bond},$

(F) $\text{R}_{\text{1-aryl}}$ where $\text{R}_{\text{1-aryl}}$ is as defined above, and

(G) $\text{R}_{\text{N-heteroaryl}}$ where $\text{R}_{\text{N-heteroaryl}}$ is as defined above, or

(VI) $-\text{CO}-(\text{C}_3\text{-C}_8 \text{ cycloalkyl})$ where alkyl is optionally substituted with one
15 or two substituents selected from the group consisting of:

(A) $-(\text{CH}_2)_{0-4}-\text{OH},$

(B) $-(\text{CH}_2)_{0-4}-\text{C}_1\text{-C}_6 \text{ alkoxy},$

(C) $-(\text{CH}_2)_{0-4}-\text{C}_1\text{-C}_6 \text{ thioalkoxy},$

(D) $-(\text{CH}_2)_{0-4}-\text{CO-O-R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is $-\text{H}, \text{C}_1\text{-C}_6 \text{ alkyl or phenyl},$

20 (E) $-(\text{CH}_2)_{0-4}-\text{CO-NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(F) $-(\text{CH}_2)_{0-4}-\text{CO-R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(G) $-(\text{CH}_2)_{0-4}-\text{SO}_2-(\text{C}_1\text{-C}_8 \text{ alkyl}),$

(H) $-(\text{CH}_2)_{0-4}-\text{SO}_2\text{-NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or
25 different and are as defined above,

(I) $-(\text{CH}_2)_{0-4}-\text{NH-CO}-(\text{C}_1\text{-C}_6 \text{ alkyl}),$

(J) $-\text{NH-CO-O-R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is as defined above,

(K) $-(\text{CH}_2)_{0-4}-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or
30 different and are as defined above,

(L) $-(\text{CH}_2)_{0-4}-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(M) $-\text{O-CO}-(\text{C}_1\text{-C}_6 \text{ alkyl}),$

(N) -O-CO-NR_{N-8}R_{N-8} where R_{N-8} are the same or different and are as defined above,

(O) -O-(C₁-C₅ alkyl)-COOH,

(P) -O-(C₁-C₆ alkyl optionally substituted with one, two, or three of
5 -F, -Cl, -Br, or -I),

(Q) -NH-SO₂-(C₁-C₆ alkyl), and

(R) -F, or -Cl;

where R_A is:

10 (I)-C₁-C₁₀ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, -OC=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, -S(=O)₀₋₂ R_{1-a} where R_{1-a} is as defined above, -NR_{1-a}C=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, -
15 C=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, and -S(=O)₂ NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(II) -(CH₂)₀₋₃-(C₃-C₈) cycloalkyl where cycloalkyl can be optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -CO-OH, -CO-
20 O-(C₁-C₄ alkyl), and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(III) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-aryl} where R_{A-x} and R_{A-y} are

(A) -H,

(B) C₁-C₄ alkyl optionally substituted with one or two -OH,

(C) C₁-C₄ alkoxy optionally substituted with one, two, or three of -
25 F,

(D) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl,

(E) C₂-C₆ alkenyl containing one or two double bonds,

(F) C₂-C₆ alkynyl containing one or two triple bonds, or

(G) phenyl,

30 and where R_{A-x} and R_{A-y} are taken together with the carbon to which they are attached to form a carbocycle of three, four, five, six or seven carbon atoms, optionally where one carbon atom is replaced by a heteroatom selected from the group consisting of -O-, -S-, -SO₂-, and -NR_{N-2}- and R_{A-aryl} is the same as R_{N-aryl},

(IV) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}\text{-R}_{\text{A-heteroaryl}}$ where $\text{R}_{\text{A-heteroaryl}}$ is the same as $\text{R}_{\text{N-heteroaryl}}$ and $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(V) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}\text{-R}_{\text{A-aryl}}\text{-R}_{\text{A-aryl}}$ where $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

5 (VI) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}\text{-R}_{\text{A-aryl}}\text{-R}_{\text{A-heteroaryl}}$ where $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(VII) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}\text{-R}_{\text{A-heteroaryl}}\text{-R}_{\text{A-aryl}}$ where $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

10 (VIII) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}\text{-R}_{\text{A-heteroaryl}}\text{-R}_{\text{A-heteroaryl}}$ where $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(IX) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}\text{-R}_{\text{A-aryl}}\text{-R}_{\text{A-heterocycle}}$ where $\text{R}_{\text{A-heterocycle}}$ is defined as $\text{R}_{\text{I-heterocycle}}$, and where $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(X) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}\text{-R}_{\text{A-heteroaryl}}\text{-R}_{\text{A-heterocycle}}$ where $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

15 (XI) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}\text{-R}_{\text{A-heterocycle}}\text{-R}_{\text{A-aryl}}$ where $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(XII) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}\text{-R}_{\text{A-heterocycle}}\text{-R}_{\text{A-heteroaryl}}$ where $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

20 (XIII) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}\text{-R}_{\text{A-heterocycle}}\text{-R}_{\text{A-heterocycle}}$ where $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(XIV) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}\text{-R}_{\text{A-heterocycle}}$ where $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(XV) $[\text{C}(\text{R}_{\text{A-1}})(\text{R}_{\text{A-2}})]_{1-3}\text{-CO-N}(\text{R}_{\text{A-3}})_2$ where $\text{R}_{\text{A-1}}$ and $\text{R}_{\text{A-2}}$ are the same or different and are selected from the group consisting of:

25 (A) -H,

(B) $\text{-C}_1\text{-C}_6$ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $\text{-NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

30 (C) $\text{C}_2\text{-C}_6$ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $\text{-NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(D) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

5 (E) -(CH₂)₁₋₂-S(O)₀₋₂-(C₁-C₆ alkyl),

(F) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

10 (G) -(C₁-C₄ alkyl)-R_{A'-aryl} where R_{A'-aryl} is as defined for R_{1-aryl},

(H) -(C₁-C₄ alkyl)-R_{A-heteroaryl} where R_{A-heteroaryl} is as defined above,

(I) -(C₁-C₄ alkyl)-R_{A-heterocycle} where R_{A-heterocycle} is as defined above,

(J) -R_{A-heteroaryl} where R_{A-heteroaryl} is as defined above,

(K) -R_{A-heterocycle} where R_{A-heterocycle} is as defined above,

15 (M) -(CH₂)₁₋₄-R_{A-4}-(CH₂)₀₋₄-R_{A'-aryl} where R_{A-4} is -O-, -S- or -NR_{A-5}- where R_{A-5} is C₁-C₆ alkyl, and where R_{A'-aryl} is defined above,

(N) -(CH₂)₁₋₄-R_{A-4}-(CH₂)₀₋₄-R_{A-heteroaryl} where R_{A-4} and R_{A-heteroaryl} are as defined above, and

(O) -R_{A'-aryl} where R_{A'-aryl} is as defined above,

20 and where R_{A-3} is the same or different and is:

(A) -H,

(B) -C₁-C₆ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined
25 above,

(C) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

30 (D) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(E) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

5 (F) $-R_{A'-aryl}$ where $R_{A'-aryl}$ is as defined above,

(G) $-R_{A-heteroaryl}$ where $R_{A-heteroaryl}$ is as defined above,

(H) $-R_{A-heterocycle}$ where $R_{A-heterocycle}$ is as defined above,

(I) $-(C_1-C_4 \text{ alkyl})-R_{A'-aryl}$ where $R_{A'-aryl}$ is as defined above,

(J) $-(C_1-C_4 \text{ alkyl})-R_{A-heteroaryl}$ where $R_{A-heteroaryl}$ is as defined above,

10 (K) $-(C_1-C_4 \text{ alkyl})-R_{A-heterocycle}$ where $R_{A-heterocycle}$ is as defined above, or

(XVI) $-\text{CH}(R_{A-aryl})_2$ where R_{A-aryl} are the same or different and are as defined above,

(XVII) $-\text{CH}(R_{A-heteroaryl})_2$ where $R_{A-heteroaryl}$ are the same or different and are
15 as defined above,

(XVIII) $-\text{CH}(R_{A-aryl})(R_{A-heteroaryl})$ where R_{A-aryl} and $R_{A-heteroaryl}$ are as defined above,

(XIX) $-\text{cyclopentyl}$, $-\text{cyclohexyl}$, or $-\text{cycloheptyl}$ ring fused to R_{A-aryl} , $R_{A-heteroaryl}$, $R_{A-heterocycle}$ where R_{A-aryl} or $R_{A-heteroaryl}$ or $R_{A-heterocycle}$ are as defined above where
20 one carbon of cyclopentyl, cyclohexyl, or $-\text{cycloheptyl}$ is optionally replaced with NH , NR_{N-5} , O , or $S(=O)_{0-2}$, and where cyclopentyl, cyclohexyl, or $-\text{cycloheptyl}$ can be optionally substituted with one or two $-C_1-C_3$ alkyl, $-F$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $=O$, or $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(XX) C_2-C_{10} alkenyl containing one or two double bonds optionally
25 substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(XXI) C_2-C_{10} alkynyl containing one or two triple bonds optionally
substituted with one, two or three substituents selected from the group consisting of C_1-C_3
30 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(XXI) $-(CH_2)_{0-1}-CHR_{A-6}-(CH_2)_{0-1}-R_{A-aryl}$ where R_{A-aryl} is as defined above and R_{A-6} is $-(CH_2)_{0-6}-OH$,

(XXII) $-(CH_2)_{0-1}-CHR_{A-6}-(CH_2)_{0-1}-R_{A-heteroaryl}$ where $R_{A-heteroaryl}$ and R_{A-6} is as defined above,

(XXIII) $-\text{CH}(-R_{A-aryl} \text{ or } R_{A-heteroaryl})-\text{CO}-O(C_1-C_4 \text{ alkyl})$ where R_{A-aryl} and $R_{A-heteroaryl}$ are as defined above,

5 (XXIV) $-\text{CH}(-CH_2-OH)-CH(-OH)-\text{micro-NO}_2$,

(XXV) $(C_1-C_6 \text{ alkyl})-O-(C_1-C_6 \text{ alkyl})-OH$,

(XXVII) $-\text{CH}_2-\text{NH}-\text{CH}_2-\text{CH}(-O-CH_2-CH_3)_2$,

(XXVIII) $-\text{H}$,

10 (XXIX) $-(CH_2)_{0-6}-C(=NR_{1-a})(NR_{1-a}R_{1-b})$ where R_{1-a} and R_{1-b} are as defined above; or

(XXX)

$-\text{C}=\text{OC}(\text{HR}_6)\text{NHR}_7$, where R_6 and R_7 are as defined below,

$-\text{C}=\text{OR}_7$, where R_7 is as defined below,

15 $-\text{C}=\text{OOR}_7$, where R_7 is as defined below, or

$-\text{SOOR}_7$ where R_7 is as defined below,

wherein R_6 is:

hydrogen,

$C_1 - C_3$ alkyl,

phenyl,

20 thioalkoxyalkyl,

alkyl substituted aryl,

cycloalkyl,

cycloalkylalkyl,

hydroxyalkyl,

25 alkoxyalkyl,

aryloxyalkyl,

haloalkyl,

carboxyalkyl,

alkoxycarbonylalkyl,

30 aminoalkyl,

(N-protected)aminoalkyl,

alkylaminoalkyl,

((N-protected)(alkyl)amino)alkyl,

dialkylaminoalkyl,

5 guanidinoalkyl,
 lower alkenyl,
 heterocyclic,
 (heterocyclic)alkyl),
 10 arylthioalkyl,
 arylsulfonylalkyl,
 (heterocyclic)thioalkyl,
 (heterocyclic)sulfonylalkyl,
 (heterocyclic)oxyalkyl,
 15 arylalkoxyalkyl,
 arylthioalkoxyalkyl,
 arylalkylsulfonylalkyl,
 (heterocyclic))alkoxyalkyl,
 (heterocyclic)thioalkoxyalkyl,
 (heterocyclic)alkylsulfonylalkyl,
 cycloalkyloxyalkyl,
 cycloalkylthioalkyl,
 cycloalkylsulfonylalkyl,
 cycloalkylalkoxyalkyl,
 20 cycloalkylthioalkoxyalkyl,
 cycloalkylalkylsulfonylalkyl,
 aminocarbonyl,
 alkylaminocarbonyl,
 dialkylaminocarbonyl,
 25 aroylealkyl,
 (heterocyclic)carbonylalkyl,
 polyhydroxyalkyl,
 aminocarbonylalkyl,
 alkylaminocarbonylalkyl,
 30 dialkylaminocarbonylalkyl,
 aryloxyalkyl, or
 alkylsulfonylalkyl,

wherein heterocyclic is pyridyl, thiazolyl, isothiazolyl,
 oxazolyl, isoxazolyl, furanyl, thienyl, tetrahydrofuranyl, tetrahydrothienyl and

tetrahydro[2H]pyranyl and wherein the heterocycle is unsubstituted or substituted with one to three substituents independently selected from hydroxy, halo, amino, alkylamino, dialkylamino, alkoxy, polyalkoxy, haloalkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, COOH, -SO₃H, lower alkenyl or lower alkyl;

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wherein R₇ is:

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C₁ - C₃ alkyl,
phenyl,
thioalkoxyalkyl,
(aryl)alkyl,
cycloalkyl,
cycloalkylalkyl,
hydroxyalkyl,
alkoxyalkyl,
aryloxyalkyl,
haloalkyl,
carboxyalkyl,
alkoxycarbonylalkyl,
aminoalkyl,
(N-protected)aminocalkyl,
alkylaminoalkyl,
((N-protected)(alkyl)amino)alkyl,
dialkylaminoalkyl,
guanidinoalkyl,
lower alkenyl,
heterocyclic,
(heterocyclic)alkyl,
arylthioalkyl,
arylsulfonyalkyl,
(heterocyclic)thioalkyl,
(heterocyclic)sulfonylalkyl,
(heterocyclic)oxyalkyl,
arylalkoxyalkyl,
arylthioalkoxyalkyl,
arylalkylsulfonylalkyl,

(heterocyclic))alkoxyalkyl,
 (heterocyclic)thioalkoxyalkyl,
 (heterocyclic)alkylsulfonylalkyl,
 cycloalkyloxyalkyl,
 cycloalkylthioalkyl,
 cycloalkylsulfonylalkyl,
 cycloalkylalkoxyalkyl,
 cycloalkylthioalkoxyalkyl,
 cycloalkylalkylsulfonylalkyl,
 aminocarbonyl,
 alkylaminocarbonyl,
 dialkylaminocarbonyl,
 aroylalkyl,
 (heterocyclic)carbonylalkyl,
 polyhydroxyalkyl,
 aminocarbonylalkyl,
 alkylaminocarbonylalkyl,
 dialkylaminocarbonylalkyl,
 aryloxyalkyl, or
 alkylsulfonylalkyl,
 wherein heterocyclic is pyridyl, thiazolyl, isothiazolyl,
 oxazolyl, isoxazolyl, furanyl, thienyl, tetrahydrofuranyl, tetrahydrothienyl and
 tetrahydro[2H]pyranyl and wherein the heterocycle is unsubstituted or substituted with
 one to three substituents independently selected from hydroxy, halo, amino, alkylamino,
 dialkylamino, alkoxy, polyalkoxy, haloalkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl,
 COOH, -SO₃H, lower alkenyl or lower alkyl;

where R_B is:

(I)-C₁-C₁₀ alkyl optionally substituted with one, two or three substituents
 selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH,
 -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined
 above, -OC=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, -S(=O)₀₋₂ R_{1-a} where
 R_{1-a} is as defined above, -NR_{1-a}C=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, -

$C=O NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above, and $-S(=O)_2 NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(II) $-(CH_2)_{0-3}-(C_3-C_8)$ cycloalkyl where cycloalkyl can be optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, $-CO-OH$, $-CO-O-$ (C_1-C_4 alkyl), and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(III) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-aryl}$ where R_{B-x} and R_{B-y} are

(A) $-H$,

(B) C_1-C_4 alkyl optionally substituted with one or two $-OH$,

(C) C_1-C_4 alkoxy optionally substituted with one, two, or three of $-F$,

(D) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl,

(E) C_2-C_6 alkenyl containing one or two double bonds,

(F) C_2-C_6 alkynyl containing one or two triple bonds, or

(G) phenyl,

and where R_{B-x} and R_{B-y} are taken together with the carbon to which they are attached to form a carbocycle of three, four, five, six or seven carbon atoms, optionally where one carbon atom is replaced by a heteroatom selected from the group consisting of $-O-$, $-S-$, $-SO_2-$, and $-NR_{N-2}$ where R_{N-2} is as defined above, and R_{B-aryl} is the same as R_{N-aryl} and is defined above

(IV) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heteroaryl}$ where $R_{B-heteroaryl}$ is the same as $R_{N-heteroaryl}$, R_{B-x} , and R_{B-y} are as defined above,

(V) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-aryl}-R_{B-aryl}$ where R_{B-aryl} , R_{B-x} , and R_{B-y} are as defined above,

(VI) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-aryl}-R_{B-heteroaryl}$ where R_{B-aryl} , $R_{B-heteroaryl}$, R_{B-x} and R_{B-y} are as defined above,

(VII) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heteroaryl}-R_{B-aryl}$ where $R_{B-heteroaryl}$, R_{B-aryl} , R_{B-x} and R_{B-y} are as defined above,

(VIII) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heteroaryl}-R_{B-heteroaryl}$ where $R_{B-heteroaryl}$, R_{B-x} and R_{B-y} are as defined above,

(IX) $-(CR_{B-x}R_{B-y})_{0-4}-R_{B-aryl}-R_{B-heterocycle}$ where $R_{B-heterocycle}$ is defined as R_1 -heterocycle, and where R_{B-aryl} , R_{B-x} and R_{B-y} are as defined above,

(X) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heteroaryl}}-\text{R}_{\text{B-heterocycle}}$ where $\text{R}_{\text{B-heteroaryl}}$, $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

(XI) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heterocycle}}-\text{R}_{\text{B-aryl}}$ where $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-aryl}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

5 (XII) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heterocycle}}-\text{R}_{\text{B-heteroaryl}}$ where $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-heteroaryl}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

(XIII) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heterocycle}}-\text{R}_{\text{B-heterocycle}}$ where $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

10 (XIV) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heterocycle}}$ where $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

(XV) $-[\text{C}(\text{R}_{\text{B-1}})(\text{R}_{\text{B-2}})]_{1-3}-\text{CO}-\text{N}-(\text{R}_{\text{B-3}})_2$ where $\text{R}_{\text{B-1}}$ and $\text{R}_{\text{B-2}}$ are the same or different and are selected from the group consisting of:

(A) -H,

15 (B) $\text{C}_1\text{-C}_6$ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $\text{-NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

20 (C) $\text{C}_2\text{-C}_6$ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $\text{-NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(D) $\text{C}_2\text{-C}_6$ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $\text{-NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(E) $-(\text{CH}_2)_{1-2}-\text{S}(\text{O})_{0-2}-(\text{C}_1\text{-C}_6 \text{ alkyl})$,

30 (F) $-(\text{CH}_2)_{0-4}-\text{C}_3\text{-C}_7$ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $\text{-NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(G) $-(\text{C}_1\text{-C}_4 \text{ alkyl})-\text{R}_{\text{B'-aryl}}$ where $\text{R}_{\text{B'-aryl}}$ is as defined above for R_{1-}

aryl,

(H) $-(\text{C}_1\text{-C}_4 \text{ alkyl})-\text{R}_{\text{B-heteroaryl}}$ where $\text{R}_{\text{B-heteroaryl}}$ is as defined above,

- (I) $-(C_1-C_4 \text{ alkyl})-R_{B\text{-heterocycle}}$ where $R_{B\text{-heterocycle}}$ is as defined above,
 (J) $-R_{B\text{-heteroaryl}}$ where $R_{B\text{-heteroaryl}}$ is as defined above,
 (K) $-R_{B\text{-heterocycle}}$ where $R_{B\text{-heterocycle}}$ is as defined above,
 (M) $-(CH_2)_{1-4}-R_{B-4}-(CH_2)_{0-4}-R_{B'\text{-aryl}}$ where R_{B-4} is $-O-$, $-S-$ or
 5 $-NR_{B-5}-$ where R_{B-5} is C_1-C_6 alkyl, and where $R_{B'\text{-aryl}}$ is defined above,
 (N) $-(CH_2)_{1-4}-R_{B-4}-(CH_2)_{0-4}-R_{B\text{-heteroaryl}}$ where R_{B-4} and $R_{B\text{-heteroaryl}}$
 are as defined above, and
 (O) $-R_{B'\text{-aryl}}$ where $R_{B'\text{-aryl}}$ is as defined above,
 and where R_{B-3} is the same or different and is:
 10 (A) $-H$,
 (B) C_1-C_6 alkyl optionally substituted with one, two or three
 substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$,
 $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as
 defined above,
 15 (C) C_2-C_6 alkenyl with one or two double bonds, optionally
 substituted with one, two or three substituents selected from the group consisting of C_1-C_3
 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$
 where R_{1-a} and R_{1-b} are as defined above,
 (D) C_2-C_6 alkynyl with one or two triple bonds, optionally
 20 substituted with one, two or three substituents selected from the group consisting of C_1-C_3
 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$
 where R_{1-a} and R_{1-b} are as defined above,
 (E) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl, optionally substituted with one,
 two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-$
 25 I , $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are
 as defined above,
 (F) $-R_{B'\text{-aryl}}$ where $R_{B'\text{-aryl}}$ is as defined above,
 (G) $-R_{B\text{-heteroaryl}}$ where $R_{B\text{-heteroaryl}}$ is as defined above,
 (H) $-R_{B\text{-heterocycle}}$ where $R_{B\text{-heterocycle}}$ is as defined above,
 30 (I) $-(C_1-C_4 \text{ alkyl})-R_{B'\text{-aryl}}$ where $R_{B'\text{-aryl}}$ is as defined above,
 (J) $-(C_1-C_4 \text{ alkyl})-R_{B\text{-heteroaryl}}$ where $R_{B\text{-heteroaryl}}$ is as defined above,
 (K) $-(C_1-C_4 \text{ alkyl})-R_{B\text{-heterocycle}}$ where $R_{B\text{-heterocycle}}$ is as defined
 above, or

(XVI) $-\text{CH}(\text{R}_{\text{B-aryl}})_2$ where $\text{R}_{\text{B-aryl}}$ are the same or different and are as defined above,

(XVII) $-\text{CH}(\text{R}_{\text{B-heteroaryl}})_2$ where $\text{R}_{\text{B-heteroaryl}}$ are the same or different and are as defined above,

5 (XVIII) $-\text{CH}(\text{R}_{\text{B-aryl}})(\text{R}_{\text{B-heteroaryl}})$ where $\text{R}_{\text{B-aryl}}$ and $\text{R}_{\text{B-heteroaryl}}$ are as defined above,

(XIX) -cyclopentyl, -cyclohexyl, or -cycloheptyl ring fused to $\text{R}_{\text{B-aryl}}$ or $\text{R}_{\text{B-heteroaryl}}$ or $\text{R}_{\text{B-heterocycle}}$ where $\text{R}_{\text{B-aryl}}$ or $\text{R}_{\text{B-heteroaryl}}$ or $\text{R}_{\text{B-heterocycle}}$ are as defined above where one carbon of cyclopentyl, cyclohexyl, or -cycloheptyl is optionally replaced with NH,
 10 $\text{NR}_{\text{N-5}}$, O, or $\text{S}(=\text{O})_{0-2}$, and where cyclopentyl, cyclohexyl, or -cycloheptyl can be optionally substituted with one or two $-\text{C}_1-\text{C}_3$ alkyl, $-\text{F}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_6 alkoxy, $=\text{O}$, or $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(XX) C_2-C_{10} alkenyl containing one or two double bonds optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3
 15 alkyl, $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_6 alkoxy, $-\text{O-phenyl}$, and $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(XXI) C_2-C_{10} alkynyl containing one or two triple bonds optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3
 20 alkyl, $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_6 alkoxy, $-\text{O-phenyl}$, and $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(XXI) $-(\text{CH}_2)_{0-1}-\text{CHR}_{\text{C-6}}-(\text{CH}_2)_{0-1}-\text{R}_{\text{B-aryl}}$ where $\text{R}_{\text{B-aryl}}$ is as defined above and $\text{R}_{\text{C-6}}$ is $-(\text{CH}_2)_{0-6}-\text{OH}$,

(XXII) $-(\text{CH}_2)_{0-1}-\text{CHR}_{\text{B-6}}-(\text{CH}_2)_{0-1}-\text{R}_{\text{B-heteroaryl}}$ where $\text{R}_{\text{B-heteroaryl}}$ and $\text{R}_{\text{C-6}}$ is as defined above,

25 (XXIII) $-\text{CH}(-\text{R}_{\text{B-aryl}} \text{ or } \text{R}_{\text{B-heteroaryl}})-\text{CO}-\text{O}(\text{C}_1-\text{C}_4 \text{ alkyl})$ where $\text{R}_{\text{B-aryl}}$ and $\text{R}_{\text{B-heteroaryl}}$ are as defined above,

(XXIV) $-\text{CH}(-\text{CH}_2-\text{OH})-\text{CH}(-\text{OH})-\text{micro-NO}_2$,

(XXV) $(\text{C}_1-\text{C}_6 \text{ alkyl})-\text{O}-(\text{C}_1-\text{C}_6 \text{ alkyl})-\text{OH}$,

(XXVII) $-\text{CH}_2-\text{NH}-\text{CH}_2-\text{CH}(-\text{O}-\text{CH}_2-\text{CH}_3)_2$,

30 (XXVIII) $-\text{H}$, or

(XXIX) $-(\text{CH}_2)_{0-6}-\text{C}(=\text{NR}_{1-a})(\text{NR}_{1-a}\text{R}_{1-b})$ where R_{1-a} and R_{1-b} are as defined above; and

where PROTECTING GROUP is selected from the group consisting of *t*-butoxycarbonyl, benzyloxycarbonyl, formyl, trityl, acetyl, trichloroacetyl, dichloroacetyl, chloroacetyl, trifluoroacetyl, difluoroacetyl, fluoroacetyl, 4-phenylbenzyloxycarbonyl, 2-methylbenzyloxycarbonyl, 4-ethoxybenzyloxycarbonyl, 4-fluorobenzyloxycarbonyl, 4-chlorobenzyloxycarbonyl, 3-chlorobenzyloxycarbonyl, 2-chlorobenzyloxycarbonyl, 2,4-dichlorobenzyloxycarbonyl, 4-bromobenzyloxycarbonyl, 3-bromobenzyloxycarbonyl, 4-nitrobenzyloxycarbonyl, 4-cyanobenzyloxycarbonyl, 2-(4-xenyl)isopropoxycarbonyl, 1,1-diphenyleth-1-yloxycarbonyl, 1,1-diphenylprop-1-yloxycarbonyl, 2-phenylprop-2-yloxycarbonyl, 2-(*p*-toluyl)prop-2-yloxycarbonyl, cyclopentanyloxycarbonyl, 1-methylcyclopentanyloxycarbonyl, cyclohexanyloxycarbonyl, 1-methylcyclohexanyloxycarbonyl, 2-methylcyclohexanyloxycarbonyl, 2-(4-toluylsulfonyl)ethoxycarbonyl, 2-(methylsulfonyl)ethoxycarbonyl, 2-(triphenylphosphino)ethoxycarbonyl, fluorenylmethoxycarbonyl, 2-(trimethylsilyl)ethoxycarbonyl, allyloxycarbonyl, 1-(trimethylsilylmethyl)prop-1-enyloxycarbonyl, 5-benzisoxalylmethoxycarbonyl, 4-acetoxybenzyloxycarbonyl, 2,2,2-trichloroethoxycarbonyl, 2-ethynyl-2-propoxycarbonyl, cyclopropylmethoxycarbonyl, 4-(decyloxy)benzyloxycarbonyl, isobornyloxycarbonyl and 1-piperidyloxycarbonyl, 9-fluorenylmethyl carbonate, -CH-CH=CH₂ and phenyl-C(=N-)-H.

42. A protected compound according to claim 41 where R₁ is:

-(CH₂)₀₋₁-(R₁-aryl), or

-(CH₂)_{n1}-(R₁-heteroaryl);

where R_A is:

-C₁-C₈ alkyl,

-(CH₂)₀₋₃-(C₃-C₇) cycloalkyl,

-(CR_{A-x}R_{A-y})₀₋₄-R_A-aryl,

-(CR_{A-x}R_{A-y})₀₋₄-R_A-heteroaryl,

-(CR_{A-x}R_{A-y})₀₋₄-R_A-heterocycle,

-cyclopentyl or -cyclohexyl ring fused to R_A-aryl or R_A-heteroaryl or R_A-

heterocycle; and

where R_B is:

-C₁-C₈ alkyl,

-(CH₂)₀₋₃-(C₃-C₇) cycloalkyl,

-(CR_{A-x}R_{A-y})₀₋₄-R_A-aryl,

$$-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}},$$

$$-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}},$$

$$-\text{cyclopentyl or -cyclohexyl ring fused to R}_{\text{A-aryl}} \text{ or } \text{R}_{\text{A-heteroaryl}} \text{ or } \text{R}_{\text{A-heterocycle}}.$$

5 43. A protected compound according to claim 42,

where R_1 is:

$$-(\text{CH}_2)-(\text{R}_{1\text{-aryl}}), \text{ or}$$

$$-(\text{CH}_2)-(\text{R}_{1\text{-heteroaryl}});$$

where R_2 is $-\text{H}$;

10 where R_3 is $-\text{H}$;

where R_N is:

$$\text{R}_{\text{N-1}}-\text{X}_\text{N}- \text{ where } \text{X}_\text{N} \text{ is:}$$

$$-\text{CO}-,$$

where $\text{R}_{\text{N-1}}$ is selected from the group consisting of:

15 $-\text{R}_{\text{N-aryl}}, \text{ and}$

$$-\text{R}_{\text{N-heteroaryl}};$$

where R_A is:

$$-\text{C}_1-\text{C}_8 \text{ alkyl},$$

$$-(\text{CH}_2)_{0-3}-(\text{C}_3-\text{C}_7) \text{ cycloalkyl},$$

20 $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-aryl}},$

$$-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}},$$

$$-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}},$$

$$-\text{cyclopentyl or -cyclohexyl ring fused to R}_{\text{A-aryl}} \text{ or } \text{R}_{\text{A-heteroaryl}} \text{ or } \text{R}_{\text{A-}}$$

heterocycle;

25 where R_B is:

$$-\text{C}_1-\text{C}_8 \text{ alkyl},$$

$$-(\text{CH}_2)_{0-3}-(\text{C}_3-\text{C}_7) \text{ cycloalkyl},$$

$$-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-aryl}},$$

$$-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heteroaryl}},$$

30 $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heterocycle}},$

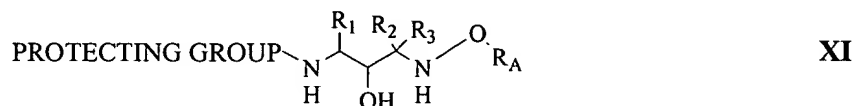
$$-\text{cyclopentyl or -cyclohexyl ring fused to R}_{\text{B-aryl}} \text{ or } \text{R}_{\text{B-heteroaryl}} \text{ or } \text{R}_{\text{B-}}$$

heterocycle.

44. A protected compound according to claim 41 where PROTECTING GROUP is *t*-butoxycarbonyl.

45. A protected compound according to claim 41 where PROTECTING GROUP is benzyloxycarbonyl.

46. A protected compound of the formula (XI)



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where R₁ is:

(I) C₁-C₆ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, C₁-C₇ alkyl (optionally substituted with C₁-C₃ alkyl and C₁-C₃ alkoxy), -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl, and -OC=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(II) -CH₂-S(O)₀₋₂-(C₁-C₆ alkyl),

(III) -CH₂-CH₂-S(O)₀₋₂-(C₁-C₆ alkyl),

(IV) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(V) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(VI) -(CH₂)_{n1}-(R_{1-aryl}) where n₁ is zero or one and where R_{1-aryl} is phenyl, 1-naphthyl, 2-naphthyl and indanyl, indenyl, dihydronaphthalyl, or tetralinyl optionally substituted with one, two, three or four of the following substituents on the aryl ring:

(A) C₁-C₆ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, and C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(B) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -

Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(C) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(D) -F, Cl, -Br or -I,

(F) -C₁-C₆ alkoxy optionally substituted with one, two or three of -F,

(G) -NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are as defined below,

(H) -OH,

(I) -C≡N,

(J) C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(K) -CO-(C₁-C₄ alkyl),

(L) -SO₂-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(M) -CO-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, or

(N) -SO₂-(C₁-C₄ alkyl),

(VII) -(CH₂)_{n1}-(R_{1-heteroaryl}) where n₁ is as defined above and where R_{1-heteroaryl}

is selected from the group consisting of:

pyridinyl,

pyrimidinyl,

quinolinyl,

benzothienyl,

indolyl,

indolinyl,

pyridazinyl,

pyrazinyl,

isoquinolyl,

quinazolinyl,

quinoxalinyl,

phthalazinyl,

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imidazolyl,
isoxazolyl,
pyrazolyl,
oxazolyl,
thiazolyl,
indolizinyll,
indazolyl,
benzothiazolyl,
benzimidazolyl,
benzofuranyl,
furanyl,
thienyl,
pyrrolyl,
oxadiazolyl,
thiadiazolyl,
triazolyl,
tetrazolyl,
oxazolopyridinyl,
imidazopyridinyl,
isothiazolyl,
naphthyridinyl,
cinnolinyll,
carbazolyl,
beta-carbolinyll,
isochromanyl,
chromanyl,
tetrahydroisoquinolinyll,
isoindolinyll,
isobenzotetrahydrofuranyl,
isobenzotetrahydrothienyl,
isobenzothieryl,
benzoxazolyl,
pyridopyridinyl,
benzotetrahydrofuranyl,

5 benzotetrahydrothienyl,
purinyl,
benzodioxolyl,
triazinyl,
phenoxazinyl,
phenothiazinyl,
pteridinyl,
benzothiazolyl,
10 imidazopyridinyl,
imidazothiazolyl,
dihydrobenzisoxazinyl,
benzisoxazinyl,
benzoxazinyl,
15 dihydrobenzisothiazinyl,
benzopyranyl,
benzothiopyranyl,
coumarinyl,
isocoumarinyl,
20 chromonyl,
chromanonyl,
pyridinyl-N-oxide,
tetrahydroquinolinyl
dihydroquinolinyl
dihydroquinolinonyl
25 dihydroisoquinolinonyl
dihydrocoumarinyl
dihydroisocoumarinyl
isoindolinonyl
benzodioxanyl
30 benzoxazolinonyl
pyrrolyl N-oxide,
pyrimidinyl N-oxide,
pyridazinyl N-oxide,
pyrazinyl N-oxide,

quinoliny N-oxide,
 indolyl N-oxide,
 indoliny N-oxide,
 isoquinolyl N-oxide,
 5 quinazoliny N-oxide,
 quinoxaliny N-oxide,
 phthalaziny N-oxide,
 imidazolyl N-oxide,
 isoxazolyl N-oxide,
 10 oxazolyl N-oxide,
 thiazolyl N-oxide,
 indoliziny N-oxide,
 indazolyl N-oxide,
 benzothiazolyl N-oxide,
 15 benzimidazolyl N-oxide,
 pyrrolyl N-oxide,
 oxadiazolyl N-oxide,
 thiadiazolyl N-oxide,
 triazolyl N-oxide,
 20 tetrazolyl N-oxide,
 benzothiopyranyl S-oxide, and
 benzothiopyranyl S,S-dioxide,

where the $R_{1\text{-heteroaryl}}$ group is bonded to $-(CH_2)_{n1}-$ by any ring atom of the
 parent $R_{1\text{-heteroaryl}}$ group substituted by hydrogen such that the new bond to the $R_{1\text{-heteroaryl}}$
 25 group replaces the hydrogen atom and its bond, where heteroaryl is optionally substituted
 with one, two, three or four of:

(1) C_1-C_6 alkyl optionally substituted with one, two or three
 substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$,
 $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

30 (2) C_2-C_6 alkenyl with one or two double bonds, optionally
 substituted with one, two or three substituents selected from the group consisting of $-F$, $-Cl$,
 $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are $-H$ or C_1-C_6
 alkyl,

(3) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

5 (4) -F, Cl, -Br or -I,

(6) -C₁-C₆ alkoxy optionally substituted with one, two, or three of -F,

(7) -NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are as defined below,

(8) -OH,

10 (9) -C≡N,

(10) C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(11) -CO-(C₁-C₄ alkyl),

15 (12) -SO₂-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(13) -CO-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, or

(14) -SO₂-(C₁-C₄ alkyl), with the proviso that when n₁ is zero R_{1-heteroaryl} is not bonded to the carbon chain by nitrogen; or

(VIII) -(CH₂)_{n1}-(R_{1-heterocycle}) where n₁ is as defined above and R_{1-heterocycle} is selected from the group consisting of:

morpholinyl,

thiomorpholinyl,

25 thiomorpholinyl S-oxide,

thiomorpholinyl S,S-dioxide,

piperazinyl,

homopiperazinyl,

pyrrolidinyl,

30 pyrrolinyl,

tetrahydropyranyl,

piperidinyl,

tetrahydrofuranyl,

tetrahydrothienyl,
 homopiperidinyl,
 homomorpholinyl,
 homothiomorpholinyl,
 5 homothiomorpholinyl S,S-dioxide,
 oxazolidinonyl,
 dihydropyrazolyl,
 dihydropyrrolyl,
 dihydropyrazinyl,
 10 dihydropyridinyl,
 dihydropyrimidinyl,
 dihydrofuryl,
 dihydropyranyl,
 tetrahydrothienyl S-oxide,
 15 tetrahydrothienyl S,S-dioxide, and
 homothiomorpholinyl S-oxide,

where the $R_{1\text{-heterocycle}}$ group is bonded by any atom of the parent R_1 .

heterocycle group substituted by hydrogen such that the new bond to the $R_{1\text{-heterocycle}}$ group
 replaces the hydrogen atom and its bond, where heterocycle is optionally substituted with
 20 one, two, three or four:

(1) C_1 - C_6 alkyl optionally substituted with one, two or three substituents selected from the group consisting of C_1 - C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C \equiv N, -CF₃, C_1 - C_3 alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

25 (2) C_2 - C_6 alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C \equiv N, -CF₃, C_1 - C_3 alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C_1 - C_6 alkyl,

30 (3) C_2 - C_6 alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C \equiv N, -CF₃, C_1 - C_3 alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C_1 - C_6 alkyl,

(4) -F, Cl, -Br or -I,

(5) C_1 - C_6 alkoxy,

(6) $-C_1-C_6$ alkoxy optionally substituted with one, two, or three $-F$,

(7) $-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are as defined below,

(8) $-OH$,

5 (9) $-C\equiv N$,

(10) C_3-C_7 cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of $-F$, $-Cl$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are $-H$ or C_1-C_6 alkyl,

(11) $-CO-(C_1-C_4$ alkyl),

10 (12) $-SO_2-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(13) $-CO-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(14) $-SO_2-(C_1-C_4$ alkyl), or

15 (15) $=O$, with the proviso that when n_1 is zero $R_{1-heterocycle}$ is not bonded to the carbon chain by nitrogen;

where R_2 is:

(I) $-H$,

20 (II) C_1-C_6 alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(III) $-(CH_2)_{0-4}-R_{2-1}$ where R_{2-1} is R_{1-aryl} or $R_{1-heteroaryl}$ where R_{1-aryl} and $R_{1-heteroaryl}$ are as defined above;

25 (IV) C_2-C_6 alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of $-F$, $-Cl$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are $-H$ or C_1-C_6 alkyl,

(V) C_2-C_6 alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of $-F$, $-Cl$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are $-H$ or C_1-C_6 alkyl, or

30 (VI) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of $-F$, $-Cl$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are $-H$ or C_1-C_6 alkyl;

where R₃ is:

(I)-H,

(II) C₁-C₆ alkyl, optionally substituted with one, two or three substituents
 5 selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH,
 -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(III) -(CH₂)₀₋₄-R₂₋₁ where R₂₋₁ is R_{1-aryl} or R_{1-heteroaryl} where R_{1-aryl} and R_{1-heteroaryl} are as defined above

(IV) C₂-C₆ alkenyl with one or two double bonds,

10 (V) C₂-C₆ alkynyl with one or two triple bonds; or

(VI) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl, optionally substituted with one, two or
 three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃,
 C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

and where R₂ and R₃ are taken together with the carbon to which they are
 15 attached to form a carbocycle of three, four, five, six, or seven carbon atoms, optionally
 where one carbon atom is replaced by a heteroatom selected from the group consisting of
 -O-, -S-, -SO₂-, and -NR_{N-2}-, where R_{N-2} is selected from the group consisting of:

(a) -H,

(b) -C₁-C₆ alkyl optionally substituted with one
 20 substituent selected from the group consisting of:

(i) -OH, and

(ii) -NH₂,

(c) -C₁-C₆ alkyl optionally substituted with one,
 two, or three -F, -Cl, -Br, or -I,

25 (d) -C₃-C₇ cycloalkyl,

(e) -(C₁-C₂ alkyl)-(C₃-C₇ cycloalkyl),

(f) -(C₁-C₆ alkyl)-O-(C₁-C₃ alkyl),

(g) -C₂-C₆ alkenyl with one or two double bonds,

(h) -C₂-C₆ alkynyl with one or two triple bonds,

30 (i) -C₁-C₆ alkyl chain with one double bond and one
 triple bond,

(j) -R_{1-aryl} where R_{1-aryl} is as defined above, and

(k) -R_{1-heteroaryl} where R_{1-heteroaryl} is as defined above;

where R_N is:

(I) $R_{N-1}-X_N$ - where X_N is selected from the group consisting of:

(A) $-\text{CO}-$,

(B) $-\text{SO}_2-$,

(C) $-(\text{CR}'\text{R}'')_{1-6}$ where R' and R'' are the same or different and are $-\text{H}$ and C_1-C_4 alkyl,

(D) $-\text{CO}-(\text{CR}'\text{R}'')_{1-6}-X_{N-1}$ where X_{N-1} is selected from the group consisting of $-\text{O}-$, $-\text{S}-$ and $-\text{NR}'-$ and where R' and R'' are as defined above, and

(E) a single bond;

where R_{N-1} is selected from the group consisting of:

(A) $R_{N-\text{aryl}}$ where $R_{N-\text{aryl}}$ is phenyl, 1-naphthyl, 2-naphthyl, tetralinyl, indanyl, 6,7,8,9-tetrahydro-5H-benzo[a]cycloheptenyl, or dihydronaphthyl optionally substituted with one, two or three of the following substituents which can be the same or different and are:

(1) C_1-C_6 alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_3 alkoxy, and $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(2) $-\text{OH}$,

(3) $-\text{NO}_2$,

(4) $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$,

(5) $-\text{CO}-\text{OH}$,

(6) $-\text{C}\equiv\text{N}$,

(7) $-(\text{CH}_2)_{0-4}-\text{CO}-\text{NR}_{N-2}\text{R}_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are selected from the group consisting of:

(a) $-\text{H}$,

(b) C_1-C_6 alkyl optionally substituted with one substituent selected from the group consisting of:

(i) $-\text{OH}$, and

(ii) $-\text{NH}_2$,

(c) C_1-C_6 alkyl optionally substituted with one, two, or three $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, or $-\text{I}$,

- (d) -C₃-C₇ cycloalkyl,
(e) -(C₁-C₂ alkyl)-(C₃-C₇ cycloalkyl),
(f) -(C₁-C₆ alkyl)-O-(C₁-C₃ alkyl),
(g) -C₂-C₆ alkenyl with one or two double bonds,
(h) -C₂-C₆ alkynyl with one or two triple bonds,
(i) -C₁-C₆ alkyl chain with one double bond and one
triple bond,
(j) -R_{1-aryl} where R_{1-aryl} is as defined above, and
(k) -R_{1-heteroaryl} where R_{1-heteroaryl} is as defined above,
(8) -(CH₂)₀₋₄-CO-(C₁-C₁₂ alkyl),
(9) -(CH₂)₀₋₄-CO-(C₂-C₁₂ alkenyl with one, two or three
double bonds),
(10) -(CH₂)₀₋₄-CO-(C₂-C₁₂ alkynyl with one, two or three
triple bonds),
(11) -(CH₂)₀₋₄-CO-(C₃-C₇ cycloalkyl),
(12) -(CH₂)₀₋₄-CO-R_{1-aryl} where R_{1-aryl} is as defined above,
(13) -(CH₂)₀₋₄-CO-R_{1-heteroaryl} where R_{1-heteroaryl} is as defined
above,
(14) -(CH₂)₀₋₄-CO-R_{1-heterocycle} where R_{1-heterocycle} is as
defined above,
(15) -(CH₂)₀₋₄-CO-R_{N-4} where R_{N-4} is selected from the
group consisting of morpholinyl, thiomorpholinyl, piperazinyl, piperidinyl,
homomorpholinyl, homothiomorpholinyl, homothiomorpholinyl S-oxide,
homothiomorpholinyl S,S-dioxide, pyrrolinyl and pyrrolidinyl where each group is
optionally substituted with one, two, three, or four of C₁-C₆ alkyl,
(16) -(CH₂)₀₋₄-CO-O-R_{N-5} where R_{N-5} is selected from the
group consisting of:
(a) C₁-C₆ alkyl,
(b) -(CH₂)₀₋₂-(R_{1-aryl}) where R_{1-aryl} is as defined
above,
(c) C₂-C₆ alkenyl containing one or two double
bonds,
(d) C₂-C₆ alkynyl containing one or two triple
bonds,

(f) $-(\text{CH}_2)_{0-2}-(\text{R}_{1\text{-heteroaryl}})$ where $\text{R}_{1\text{-heteroaryl}}$ is as

(17) $-(\text{CH}_2)_{0-4}-\text{SO}_2-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are as

(18) $-(\text{CH}_2)_{0-4}-\text{SO}-(\text{C}_1-\text{C}_8 \text{ alkyl})$,

(19) $-(\text{CH}_2)_{0-4}-\text{SO}_2-(\text{C}_1-\text{C}_{12} \text{ alkyl})$,

(20) $-(\text{CH}_2)_{0-4}-\text{SO}_2-(\text{C}_3\text{-C}_7 \text{ cycloalkyl})$,

(21) $-(\text{CH}_2)_{0-4}-\text{N}(\text{H or R}_{\text{N-5}})-\text{CO}-\text{O}-\text{R}_{\text{N-5}}$ where $\text{R}_{\text{N-5}}$ can be

10 the same or different and is as defined above.

(22) $-(\text{CH}_2)_{0-4}-\text{N}(\text{H or R}_{\text{N-5}})-\text{CO}-\text{N}(\text{R}_{\text{N-5}})_2$, where $\text{R}_{\text{N-5}}$ can

be the same or different and is as defined above,

(23) $-(\text{CH}_2)_{0-4}-\text{N}-\text{CS}-\text{N}(\text{R}_{\text{N}-5})_2$, where $\text{R}_{\text{N}-5}$ can be the same as above.

15 (24) $-(\text{CH}_2)_{0-4}-\text{N}(-\text{H or R}_{\text{N-5}})-\text{CO}-\text{R}_{\text{N-2}}$ where $\text{R}_{\text{N-5}}$ and $\text{R}_{\text{N-2}}$
can be the same or different and are as defined above.

(25) $-(\text{CH}_2)_{0-4}-\text{NR}_{\text{N}-2}\text{R}_{\text{N}-3}$ where $\text{R}_{\text{N}-2}$ and $\text{R}_{\text{N}-3}$ can be the defined above.

(26) $-(\text{CH}_2)_{0-4}-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above.

20 (27) $-(\text{CH}_2)_{0-4}-\text{O}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl}),$

(28) $-(\text{CH}_2)_{0-4}-\text{O}-\text{P}(\text{O})-(\text{OR}_{\text{N-aryl-1}})_2$ where $\text{R}_{\text{N-aryl-1}}$ is $-\text{H}$ or

C₁-C₄ alkyl,

(29) $-(\text{CH}_2)_{0-4}-\text{O}-\text{CO}-\text{N}(\text{R}_{\text{N-5}})_2$ where $\text{R}_{\text{N-5}}$ is as defined

above,

25 (30) $-(CH_2)_{0-4}-O-CS-N(R_{N-5})_2$ where R_{N-5} is as defined

above,

(31) $-(\text{CH}_2)_{0-4}-\text{O}-(\text{R}_{\text{N-5}})_2$ where $\text{R}_{\text{N-5}}$ is as defined above,

(32) $-(\text{CH}_2)_{0-4}-\text{O}-(\text{R}_{\text{N-5}})_2-\text{COOH}$ where $\text{R}_{\text{N-5}}$ is as defined

above,

30 (33) $-(\text{CH}_2)_{0-4}-\text{S}-(\text{R}_{\text{N-5}})_2$ where $\text{R}_{\text{N-5}}$ is as defined above.

(34) $-(\text{CH}_2)_{0-4}-\text{O}-(\text{C}_1-\text{C}_6 \text{ alkyl optionally substituted with}$

one, two, three, four, or five of $-F$),

(35) C₃-C₇ cycloalkyl,

(36) C₂-C₆ alkenyl with one or two double bonds optionally substituted with C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(37) C₂-C₆ alkynyl with one or two triple bonds optionally substituted with C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(38) -(CH₂)₀₋₄-N(-H or R_{N-5})-SO₂-R_{N-2} where R_{N-5} and R_{N-2} can be the same or different and are as described above, or

(39) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl,
(B) -R_{N-heteroaryl} where R_{N-heteroaryl} is selected from the group consisting of:

pyridinyl,
pyrimidinyl,
quinolinyl,
benzothienyl,
indolyl,
indolinyl,
pyridazinyl,
pyrazinyl,
isoindolyl,
isoquinolyl,
quinazolinyl,
quinoxalinyl,
phthalazinyl,
imidazolyl,
isoxazolyl,
pyrazolyl,
oxazolyl,
thiazolyl,
indolizinyl,
indazolyl,
benzothiazolyl,
benzimidazolyl,

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benzofuranyl,
furanyl,
thienyl,
pyrrolyl,
oxadiazolyl,
thiadiazolyl,
triazolyl,
tetrazolyl,
oxazolopyridinyl,
imidazopyridinyl,
isothiazolyl,
naphthyridinyl,
cinnolinyl,
carbazolyl,
beta-carbolinyl,
isochromanyl,
chromanyl,
tetrahydroisoquinolinyl,
isoindolinyl,
isobenzotetrahydrofuranyl,
isobenzotetrahydrothienyl,
isobenzothienyl,
benzoxazolyl,
pyridopyridinyl,
benzotetrahydrofuranyl,
benzotetrahydrothienyl,
purinyl,
benzodioxolyl,
triazinyl,
phenoxazinyl,
phenothiazinyl,
pteridinyl,
benzothiazolyl,
imidazopyridinyl,

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imidazothiazolyl,
dihydrobenzisoxazinyl,
benzisoxazinyl,
benzoxazinyl,
dihydrobenzisothiazinyl,
benzopyranyl,
benzothiopyranyl,
coumarinyl,
isocoumarinyl,
chromonyl,
chromanonyl,
pyridinyl-N-oxide,
tetrahydroquinolinyl,
dihydroquinolinyl,
dihydroquinolinonyl,
dihydroisoquinolinonyl,
dihydrocoumarinyl,
dihydroisocoumarinyl,
isoindolinonyl,
benzodioxanyl,
benzoxazolinonyl,
pyrrolyl N-oxide,
pyrimidinyl N-oxide,
pyridazinyl N-oxide,
pyrazinyl N-oxide,
quinolinyl N-oxide,
indolyl N-oxide,
indolinyl N-oxide,
isoquinolyl N-oxide,
quinazolinyl N-oxide,
quinoxalinyl N-oxide,
phthalazinyl N-oxide,
imidazolyl N-oxide,
isoxazolyl N-oxide,

5 oxazolyl N-oxide,
 thiazolyl N-oxide,
 indoliziny N-oxide,
 indazolyl N-oxide,
 benzothiazolyl N-oxide,
 benzimidazolyl N-oxide,
 pyrrolyl N-oxide,
 oxadiazolyl N-oxide,
 thiadiazolyl N-oxide,
 10 triazolyl N-oxide,
 tetrazolyl N-oxide,
 benzothiopyranyl S-oxide, and
 benzothiopyranyl S,S-dioxide

15 where the $R_{N\text{-heteroaryl}}$ group is bonded by any atom of the parent $R_{N\text{-heteroaryl}}$ group substituted by hydrogen such that the new bond to the $R_{N\text{-heteroaryl}}$ group replaces the hydrogen atom and its bond, where heteroaryl is optionally substituted with one, two, three, or four of:

20 (1) $C_1\text{-}C_6$ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of $C_1\text{-}C_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C \equiv N, -CF₃, $C_1\text{-}C_3$ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

25 (2) -OH,
 (3) -NO₂,
 (4) -F, -Cl, -Br, or -I,
 (5) -CO-OH,
 (6) -C \equiv N,

(7) -(CH₂)₀₋₄-CO-NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are the same or different and are selected from the group consisting of:

30 (a) -H,
 (b) $C_1\text{-}C_6$ alkyl optionally substituted with one substituent selected from the group consisting of:

(i) -OH, and
 (ii) -NH₂,

(c) $-C_1-C_6$ alkyl optionally substituted with one,
two, or three $-F$, $-Cl$, $-Br$, $-I$,

(d) $-C_3-C_7$ cycloalkyl,

(e) $-(C_1-C_2 \text{ alkyl})-(C_3-C_7 \text{ cycloalkyl})$,

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(f) $-(C_1-C_6 \text{ alkyl})-O-(C_1-C_3 \text{ alkyl})$,

(g) $-C_2-C_6$ alkenyl with one or two double bonds,

(h) $-C_2-C_6$ alkynyl with one or two triple bonds,

(i) $-C_1-C_6$ alkyl chain with one double bond and one
triple bond,

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(j) $-R_{1-aryl}$ where R_{1-aryl} is as defined above,

(k) $-R_{1-heteroaryl}$ where $R_{1-heteroaryl}$ is as defined above,

(8) $-(CH_2)_{0-4}-CO-(C_1-C_{12} \text{ alkyl})$,

(9) $-(CH_2)_{0-4}-CO-(C_2-C_{12} \text{ alkenyl with one, two or three}$
double bonds),

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(10) $-(CH_2)_{0-4}-CO-(C_2-C_{12} \text{ alkynyl with one, two or three}$
triple bonds),

(11) $-(CH_2)_{0-4}-CO-(C_3-C_7 \text{ cycloalkyl})$,

(12) $-(CH_2)_{0-4}-CO-R_{1-aryl}$ where R_{1-aryl} is as defined above,

(13) $-(CH_2)_{0-4}-CO-R_{1-heteroaryl}$ where $R_{1-heteroaryl}$ is as defined

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above,

(14) $-(CH_2)_{0-4}-CO-R_{1-heterocycle}$ where $R_{1-heterocycle}$ is as

defined above,

(15) $-(CH_2)_{0-4}-CO-R_{N-4}$ where R_{N-4} is selected from the
group consisting of morpholinyl, thiomorpholinyl, piperazinyl, piperidinyl,

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homomorpholinyl, homothiomorpholinyl, homothiomorpholinyl S-oxide,
homothiomorpholinyl S,S-dioxide, pyrrolinyl and pyrrolidinyl where each group is
optionally substituted with one, two, three, or four of C_1-C_6 alkyl,

(16) $-(CH_2)_{0-4}-CO-O-R_{N-5}$ where R_{N-5} is selected from the
group consisting of:

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(a) C_1-C_6 alkyl,

(b) $-(CH_2)_{0-2}-(R_{1-aryl})$ where R_{1-aryl} is as defined

above,

(c) C_2-C_6 alkenyl containing one or two double

bonds,

(d) C₂-C₆ alkynyl containing one or two triple bonds,

(e) C₃-C₇ cycloalkyl, and

(f) -(CH₂)₀₋₂-(R_{1-heteroaryl}) where R_{1-heteroaryl} is as defined above;

(17) -(CH₂)₀₋₄-SO₂-NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are as defined above,

(18) -(CH₂)₀₋₄-SO-(C₁-C₈ alkyl),

(19) -(CH₂)₀₋₄-SO₂-(C₁-C₁₂ alkyl),

(20) -(CH₂)₀₋₄-SO₂-(C₃-C₇ cycloalkyl),

(21) -(CH₂)₀₋₄-N(H or R_{N-5})-CO-O-R_{N-5} where R_{N-5} can be the same or different and is as defined above,

(22) -(CH₂)₀₋₄-N(H or R_{N-5})-CO-N(R_{N-5})₂, where R_{N-5} can be the same or different and is as defined above,

(23) -(CH₂)₀₋₄-N-CS-N(R_{N-5})₂, where R_{N-5} can be the same or different and is as defined above,

(24) -(CH₂)₀₋₄-N(-H or R_{N-5})-CO-R_{N-2} where R_{N-5} and R_{N-2} can be the same or different and are as defined above,

(25) -(CH₂)₀₋₄-NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} can be the same or different and are as defined above,

(26) -(CH₂)₀₋₄-R_{N-4} where R_{N-4} is as defined above,

(27) -(CH₂)₀₋₄-O-CO-(C₁-C₆ alkyl),

(28) -(CH₂)₀₋₄-O-P(O)-(OR_{N-aryl-1})₂ where R_{N-aryl-1} is -H or C₁-C₄ alkyl,

(29) -(CH₂)₀₋₄-O-CO-N(R_{N-5})₂ where R_{N-5} is as defined above,

(30) -(CH₂)₀₋₄-O-CS-N(R_{N-5})₂ where R_{N-5} is as defined above,

(31) -(CH₂)₀₋₄-O-(R_{N-5})₂ where R_{N-5} is as defined above,

(32) -(CH₂)₀₋₄-O-(R_{N-5})₂-COOH where R_{N-5} is as defined above,

(33) -(CH₂)₀₋₄-S-(R_{N-5})₂ where R_{N-5} is as defined above,

(34) -(CH₂)₀₋₄-O-(C₁-C₆ alkyl optionally substituted with one, two, three, four, or five of -F),

(35) C₃-C₇ cycloalkyl,

(36) C₂-C₆ alkenyl with one or two double bonds optionally substituted with C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

5 (37) C₂-C₆ alkynyl with one or two triple bonds optionally substituted with C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(38) -(CH₂)₀₋₄-N(-H or R_{N-5})-SO₂-R_{N-2} where R_{N-5} and R_{N-2} can be the same or different and are as defined above, or

10 (39) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl,

(C) R_{N-aryl}-W-R_{N-aryl}, where R_{N-aryl} can be the same or different,

(D) R_{N-aryl}-W-R_{N-heteroaryl},

(E) R_{N-aryl}-W-R_{N-1-heterocycle}, wherein R_{N-1-heterocycle} is the same as R_{1-heterocycle}, and R_{1-heterocycle} is as defined above

15 (F) R_{N-heteroaryl}-W-R_{N-aryl},

(G) R_{N-heteroaryl}-W-R_{N-heteroaryl},

(H) R_{N-heteroaryl}-W-R_{N-1-heterocycle},

(I) R_{N-heterocycle}-W-R_{N-aryl}, wherein R_{N-heterocycle} is the same as R_{1-heterocycle}, and R_{1-heterocycle} is as defined above, and R_{N-aryl} is as defined above,

20 (J) R_{N-heterocycle}-W-R_{N-heteroaryl}, and

(K) R_{N-heterocycle}-W-R_{N-1-heterocycle},

where W is

(17) -(CH₂)₀₋₄-,

(18) -O-,

25 (19) -S(O)₀₋₂-,

(20) -N(R_{N-5})- where R_{N-5} is as defined above, or

(5) -CO-;

(II) -CO-(C₁-C₁₀ alkyl) where alkyl is optionally substituted with one three substituents selected from the group consisting of:

30 (A) -OH,

(B) -C₁-C₆ alkoxy,

(C) -C₁-C₆ thioalkoxy,

(D) -CO-O-R_{N-8} where R_{N-8} is -H, C₁-C₆ alkyl or -phenyl,

(E) $-\text{CO}-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(F) $-\text{CO}-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(G) $-\text{SO}_2-(\text{C}_1-\text{C}_8 \text{ alkyl})$,

5 (H) $-\text{SO}_2-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(I) $-\text{NH}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

(J) $-\text{NH}-\text{CO}-\text{O}-\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is as defined above,

(K) $-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and
10 are as defined above,

(L) $-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(M) $-\text{O}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

(N) $-\text{O}-\text{CO}-\text{NR}_{\text{N-8}}\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ are the same or different and are
as defined above,

15 (O) $-\text{O}-(\text{C}_1-\text{C}_5 \text{ alkyl})-\text{COOH}$,

(P) $-\text{O}-(\text{C}_1-\text{C}_6 \text{ alkyl})$ optionally substituted with one, two, or three of
-F, -Cl, -Br, or -I),

(Q) $-\text{NH}-\text{SO}_2-(\text{C}_1-\text{C}_6 \text{ alkyl})$, and

(R) -F, or -Cl,

20 (III) $-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})-\text{O}-(\text{C}_1-\text{C}_6 \text{ alkyl})$ where alkyl is optionally substituted with one, two, or three substituents selected from the group consisting of:

(A) -OH,

(B) $-\text{C}_1-\text{C}_6 \text{ alkoxy}$,

(C) $-\text{C}_1-\text{C}_6 \text{ thioalkoxy}$,

25 (D) $-\text{CO}-\text{O}-\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is -H, $\text{C}_1-\text{C}_6 \text{ alkyl}$ or -phenyl,

(E) $-\text{CO}-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different
and are as defined above,

(F) $-\text{CO}-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(G) $-\text{SO}_2-(\text{C}_1-\text{C}_8 \text{ alkyl})$,

30 (H) $-\text{SO}_2-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different
and are as defined above,

(I) $-\text{NH}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

(J) $-\text{NH}-\text{CO}-\text{O}-\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is as defined above,

(K) $-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(L) $-R_{N-4}$ where R_{N-4} is as defined above,

(M) $-O-CO-(C_1-C_6 \text{ alkyl})$,

5 (N) $-O-CO-NR_{N-8}R_{N-8}$ where R_{N-8} are the same or different and are as defined above,

(O) $-O-(C_1-C_5 \text{ alkyl})-COOH$,

(P) $-O-(C_1-C_6 \text{ alkyl})$ optionally substituted with one, two, or three of -F, -Cl, -Br, or -I),

10 (Q) $-NH-SO_2-(C_1-C_6 \text{ alkyl})$, and

(R) -F, or -Cl,

(IV) $-CO-(C_1-C_6 \text{ alkyl})-S-(C_1-C_6 \text{ alkyl})$ where alkyl is optionally substituted with one, two, or three of substituents selected from the group consisting of:

(A) -OH,

15 (B) $-C_1-C_6 \text{ alkoxy}$,

(C) $-C_1-C_6 \text{ thioalkoxy}$,

(D) $-CO-O-R_{N-8}$ where R_{N-8} is as defined above,

(E) $-CO-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

20 (F) $-CO-R_{N-4}$ where R_{N-4} is as defined above,

(G) $-SO_2-(C_1-C_8 \text{ alkyl})$,

(H) $-SO_2-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(I) $-NH-CO-(C_1-C_6 \text{ alkyl})$,

25 (J) $-NH-CO-O-R_{N-8}$ where R_{N-8} is as defined above,

(K) $-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(L) $-R_{N-4}$ where R_{N-4} is as defined above,

(M) $-O-CO-(C_1-C_6 \text{ alkyl})$,

30 (N) $-O-CO-NR_{N-8}R_{N-8}$ where R_{N-8} are the same or different and are as defined above,

(O) $-O-(C_1-C_5 \text{ alkyl})-COOH$,

(P) $-\text{O}-(\text{C}_1\text{-C}_6 \text{ alkyl optionally substituted with one, two, or three of } -\text{F}, -\text{Cl}, -\text{Br}, \text{ or } -\text{I}),$

(Q) $-\text{NH-SO}_2-(\text{C}_1\text{-C}_6 \text{ alkyl}),$ and

(R) $-\text{F}, \text{ or } -\text{Cl},$

5 (V) $-\text{CO-CH}((\text{CH}_2)_{0-2}\text{-O-}\text{R}_{\text{N-10}})-(\text{CH}_2)_{0-2}\text{-R}_{\text{N-aryl}}/\text{R}_{\text{N-heteroaryl}}$ where $\text{R}_{\text{N-aryl}}$ and $\text{R}_{\text{N-heteroaryl}}$ are as defined above, where $\text{R}_{\text{N-10}}$ is selected from the group consisting of:

(A) $-\text{H},$

(B) $\text{C}_1\text{-C}_6 \text{ alkyl},$

(C) $\text{C}_3\text{-C}_7 \text{ cycloalkyl},$

10 (D) $\text{C}_2\text{-C}_6 \text{ alkenyl with one double bond},$

(E) $\text{C}_2\text{-C}_6 \text{ alkynyl with one triple bond},$

(F) $\text{R}_{1\text{-aryl}}$ where $\text{R}_{1\text{-aryl}}$ is as defined above, and

(G) $\text{R}_{\text{N-heteroaryl}}$ where $\text{R}_{\text{N-heteroaryl}}$ is as defined above, or

(VI) $-\text{CO}-(\text{C}_3\text{-C}_8 \text{ cycloalkyl})$ where alkyl is optionally substituted with one
15 or two substituents selected from the group consisting of:

(A) $-(\text{CH}_2)_{0-4}\text{-OH},$

(B) $-(\text{CH}_2)_{0-4}\text{-C}_1\text{-C}_6 \text{ alkoxy},$

(C) $-(\text{CH}_2)_{0-4}\text{-C}_1\text{-C}_6 \text{ thioalkoxy},$

(D) $-(\text{CH}_2)_{0-4}\text{-CO-O-}\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is $-\text{H}, \text{ C}_1\text{-C}_6 \text{ alkyl or phenyl},$

20 (E) $-(\text{CH}_2)_{0-4}\text{-CO-NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(F) $-(\text{CH}_2)_{0-4}\text{-CO-}\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(G) $-(\text{CH}_2)_{0-4}\text{-SO}_2-(\text{C}_1\text{-C}_8 \text{ alkyl}),$

(H) $-(\text{CH}_2)_{0-4}\text{-SO}_2\text{-NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or
25 different and are as defined above,

(I) $-(\text{CH}_2)_{0-4}\text{-NH-CO}-(\text{C}_1\text{-C}_6 \text{ alkyl}),$

(J) $-\text{NH-CO-O-}\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is as defined above,

(K) $-(\text{CH}_2)_{0-4}\text{-NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or
different and are as defined above,

30 (L) $-(\text{CH}_2)_{0-4}\text{-R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(M) $-\text{O-CO}-(\text{C}_1\text{-C}_6 \text{ alkyl}),$

(N) $-O-CO-NR_{N-8}R_{N-8}$ where R_{N-8} are the same or different and are as defined above,

(O) $-O-(C_1-C_5 \text{ alkyl})-COOH$,

(P) $-O-(C_1-C_6 \text{ alkyl})$ optionally substituted with one, two, or three of
5 $-F, -Cl, -Br, \text{ or } -I$,

(Q) $-NH-SO_2-(C_1-C_6 \text{ alkyl})$, and

(R) $-F, \text{ or } -Cl$;

where R_A is:

10 (I) $-C_1-C_{10} \text{ alkyl}$ optionally substituted with one, two or three substituents selected from the group consisting of $C_1-C_3 \text{ alkyl}$, $-F, -Cl, -Br, -I, -OH$, $-SH, -C\equiv N, -CF_3, C_1-C_6 \text{ alkoxy}$, $-O\text{-phenyl}$, $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above, $-OC=O NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above, $-S(=O)_{0-2} R_{1-a}$ where R_{1-a} is as defined above, $-NR_{1-a}C=O NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above, $-$
15 $C=O NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above, and $-S(=O)_2 NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(II) $-(CH_2)_{0-3}-(C_3-C_8) \text{ cycloalkyl}$ where cycloalkyl can be optionally substituted with one, two or three substituents selected from the group consisting of $C_1-C_3 \text{ alkyl}$, $-F, -Cl, -Br, -I, -OH, -SH, -C\equiv N, -CF_3, C_1-C_6 \text{ alkoxy}$, $-O\text{-phenyl}$, $-CO-OH, -CO-$
20 $O-(C_1-C_4 \text{ alkyl})$, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(III) $-(CR_{A-x}R_{A-y})_{0-4}-R_{A-aryl}$ where R_{A-x} and R_{A-y} are

(A) $-H$,

(B) $C_1-C_4 \text{ alkyl}$ optionally substituted with one or two $-OH$,

(C) $C_1-C_4 \text{ alkoxy}$ optionally substituted with one, two, or three of $-$
25 F ,

(D) $-(CH_2)_{0-4}-C_3-C_7 \text{ cycloalkyl}$,

(E) $C_2-C_6 \text{ alkenyl}$ containing one or two double bonds,

(F) $C_2-C_6 \text{ alkynyl}$ containing one or two triple bonds, or

(G) phenyl ,

30 and where R_{A-x} and R_{A-y} are taken together with the carbon to which they are attached to form a carbocycle of three, four, five, six or seven carbon atoms, optionally where one carbon atom is replaced by a heteroatom selected from the group consisting of $-O-$, $-S-$, $-SO_2-$, and $-NR_{N-2}-$ and R_{A-aryl} is the same as R_{N-aryl} ,

(IV) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}}$ where $\text{R}_{\text{A-heteroaryl}}$ is the same as $\text{R}_{\text{N-heteroaryl}}$ and $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(V) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-aryl}}-\text{R}_{\text{A-aryl}}$ where $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

5 (VI) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-aryl}}-\text{R}_{\text{A-heteroaryl}}$ where $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(VII) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}}-\text{R}_{\text{A-aryl}}$ where $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

10 (VIII) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}}-\text{R}_{\text{A-heteroaryl}}$ where $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(IX) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-aryl}}-\text{R}_{\text{A-heterocycle}}$ where $\text{R}_{\text{A-heterocycle}}$ is defined as $\text{R}_{\text{I-heterocycle}}$, and where $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(X) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}}-\text{R}_{\text{A-heterocycle}}$ where $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

15 (XI) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}}-\text{R}_{\text{A-aryl}}$ where $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(XII) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}}-\text{R}_{\text{A-heteroaryl}}$ where $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

20 (XIII) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}}-\text{R}_{\text{A-heterocycle}}$ where $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(XIV) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}}$ where $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(XV) $-\text{[C(R}_{\text{A-1}})(\text{R}_{\text{A-2}})]_{1-3}-\text{CO-N-(R}_{\text{A-3}})_2$ where $\text{R}_{\text{A-1}}$ and $\text{R}_{\text{A-2}}$ are the same or different and are selected from the group consisting of:

25 (A) -H,

(B) $\text{-C}_1\text{-C}_6$ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $\text{-NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

30 (C) $\text{C}_2\text{-C}_6$ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $\text{-NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(D) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

5 (E) -(CH₂)₁₋₂-S(O)₀₋₂-(C₁-C₆ alkyl),

(F) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

10 (G) -(C₁-C₄ alkyl)-R_{A'-aryl} where R_{A'-aryl} is as defined for R_{1-aryl},

(H) -(C₁-C₄ alkyl)-R_{A-heteroaryl} where R_{A-heteroaryl} is as defined above,

(I) -(C₁-C₄ alkyl)-R_{A-heterocycle} where R_{A-heterocycle} is as defined above,

(J) -R_{A-heteroaryl} where R_{A-heteroaryl} is as defined above,

(K) -R_{A-heterocycle} where R_{A-heterocycle} is as defined above,

15 (M) -(CH₂)₁₋₄-R_{A-4}-(CH₂)₀₋₄-R_{A'-aryl} where R_{A-4} is -O-, -S- or -NR_{A-5}- where R_{A-5} is C₁-C₆ alkyl, and where R_{A'-aryl} is defined above,

(N) -(CH₂)₁₋₄-R_{A-4}-(CH₂)₀₋₄-R_{A-heteroaryl} where R_{A-4} and R_{A-heteroaryl} are as defined above, and

(O) -R_{A'-aryl} where R_{A'-aryl} is as defined above,

20 and where R_{A-3} is the same or different and is:

(A) -H,

(B) -C₁-C₆ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined
25 above,

(C) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

30 (D) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(E) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

- 5 (F) $-R_{A'-aryl}$ where $R_{A'-aryl}$ is as defined above,
 (G) $-R_{A-heteroaryl}$ where $R_{A-heteroaryl}$ is as defined above,
 (H) $-R_{A-heterocycle}$ where $R_{A-heterocycle}$ is as defined above,
 (I) $-(C_1-C_4 \text{ alkyl})-R_{A'-aryl}$ where $R_{A'-aryl}$ is as defined above,
 (J) $-(C_1-C_4 \text{ alkyl})-R_{A-heteroaryl}$ where $R_{A-heteroaryl}$ is as defined above,
 10 (K) $-(C_1-C_4 \text{ alkyl})-R_{A-heterocycle}$ where $R_{A-heterocycle}$ is as defined above, or

(XVI) $-\text{CH}(R_{A-aryl})_2$ where R_{A-aryl} are the same or different and are as defined above,

- (XVII) $-\text{CH}(R_{A-heteroaryl})_2$ where $R_{A-heteroaryl}$ are the same or different and are
 15 as defined above,

(XVIII) $-\text{CH}(R_{A-aryl})(R_{A-heteroaryl})$ where R_{A-aryl} and $R_{A-heteroaryl}$ are as defined above,

- (XIX) $-\text{cyclopentyl}$, $-\text{cyclohexyl}$, or $-\text{cycloheptyl}$ ring fused to R_{A-aryl} , $R_{A-heteroaryl}$, $R_{A-heterocycle}$ where R_{A-aryl} or $R_{A-heteroaryl}$ or $R_{A-heterocycle}$ are as defined above where
 20 one carbon of cyclopentyl, cyclohexyl, or $-\text{cycloheptyl}$ is optionally replaced with NH , NR_{N-5} , O , or $S(=O)_{0-2}$, and where cyclopentyl, cyclohexyl, or $-\text{cycloheptyl}$ can be optionally substituted with one or two $-C_1-C_3$ alkyl, $-F$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $=O$, or $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

- (XX) C_2-C_{10} alkenyl containing one or two double bonds optionally
 25 substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

- (XXI) C_2-C_{10} alkynyl containing one or two triple bonds optionally
 substituted with one, two or three substituents selected from the group consisting of C_1-C_3
 30 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(XXI) $-(CH_2)_{0-1}-CH(R_{A-6})-(CH_2)_{0-1}-R_{A-aryl}$ where R_{A-aryl} is as defined above and R_{A-6} is $-(CH_2)_{0-6}-OH$,

(XXII) $-(\text{CH}_2)_{0-1}-\text{CHR}_{\text{A-6}}-(\text{CH}_2)_{0-1}-\text{R}_{\text{A-heteroaryl}}$ where $\text{R}_{\text{A-heteroaryl}}$ and $\text{R}_{\text{A-6}}$ is as defined above,

(XXIII) $-\text{CH}(-\text{R}_{\text{A-aryl}}$ or $\text{R}_{\text{A-heteroaryl}})-\text{CO}-\text{O}(\text{C}_1-\text{C}_4 \text{ alkyl})$ where $\text{R}_{\text{A-aryl}}$ and $\text{R}_{\text{A-heteroaryl}}$ are as defined above,

5 (XXIV) $-\text{CH}(-\text{CH}_2-\text{OH})-\text{CH}(-\text{OH})-\text{micro-NO}_2$,

(XXV) $(\text{C}_1-\text{C}_6 \text{ alkyl})-\text{O}-(\text{C}_1-\text{C}_6 \text{ alkyl})-\text{OH}$,

(XXVII) $-\text{CH}_2-\text{NH}-\text{CH}_2-\text{CH}(-\text{O}-\text{CH}_2-\text{CH}_3)_2$,

(XXVIII) $-\text{H}$,

10 (XXIX) $-(\text{CH}_2)_{0-6}-\text{C}(=\text{NR}_{1-\text{a}})(\text{NR}_{1-\text{a}}\text{R}_{1-\text{b}})$ where $\text{R}_{1-\text{a}}$ and $\text{R}_{1-\text{b}}$ are as defined above; or

(XXX)

$-\text{C}=\text{OC}(\text{HR}_6)\text{NHR}_7$, where R_6 and R_7 are as defined below,

$-\text{C}=\text{OR}_7$, where R_7 is as defined below,

15 $-\text{C}=\text{OOR}_7$, where R_7 is as defined below, or

$-\text{SOOR}_7$ where R_7 is as defined below,

wherein R_6 is:

hydrogen,

$\text{C}_1 - \text{C}_3$ alkyl,

phenyl,

20 thioalkoxyalkyl,

alkyl substituted aryl,

cycloalkyl,

cycloalkylalkyl,

hydroxyalkyl,

25 alkoxyalkyl,

aryloxyalkyl,

haloalkyl,

carboxyalkyl,

alkoxycarbonylalkyl,

30 aminoalkyl,

(N-protected)aminoalkyl,

alkylaminoalkyl,

((N-protected)(alkyl)amino)alkyl,

dialkylaminoalkyl,

5
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guanidinoalkyl,
lower alkenyl,
heterocyclic,
(heterocyclic)alkyl),
arylthioalkyl,
arylsulfonylalkyl,
(heterocyclic)thioalkyl,
(heterocyclic)sulfonylalkyl,
(heterocyclic)oxyalkyl,
arylalkoxyalkyl,
arylthioalkoxyalkyl,
arylalkylsulfonylalkyl,
(heterocyclic)alkoxyalkyl,
(heterocyclic)thioalkoxyalkyl,
(heterocyclic)alkylsulfonylalkyl,
cycloalkyloxyalkyl,
cycloalkylthioalkyl,
cycloalkylsulfonylalkyl,
cycloalkylalkoxyalkyl,
cycloalkylthioalkoxyalkyl,
cycloalkylalkylsulfonylalkyl,
aminocarbonyl,
alkylaminocarbonyl,
dialkylaminocarbonyl,
aroalkyl,
(heterocyclic)carbonylalkyl,
polyhydroxyalkyl,
aminocarbonylalkyl,
alkylaminocarbonylalkyl,
dialkylaminocarbonylalkyl,
aryloxyalkyl, or
alkylsulfonylalkyl,

wherein heterocyclic is pyridyl, thiazolyl, isothiazolyl,
oxazolyl, isoxazolyl, furanyl, thienyl, tetrahydrofuranyl, tetrahydrothienyl and

tetrahydro[2H]pyranyl and wherein the heterocycle is unsubstituted or substituted with one to three substituents independently selected from hydroxy, halo, amino, alkylamino, dialkylamino, alkoxy, polyalkoxy, haloalkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, COOH, -SO₃H, lower alkenyl or lower alkyl;

5

wherein R₇ is:

10

C₁ - C₃ alkyl,
phenyl,
thioalkoxyalkyl,
(aryl)alkyl,
cycloalkyl,
cycloalkylalkyl,
hydroxyalkyl,

15

alkoxyalkyl,
aryloxyalkyl,
haloalkyl,
carboxyalkyl,
alkoxycarbonylalkyl,
aminoalkyl,

20

(N-protected)aminocalkyl,
alkylaminoalkyl,
((N-protected)(alkyl)amino)alkyl,
dialkylaminoalkyl,
guanidinoalkyl,

25

lower alkenyl,
heterocyclic,
(heterocyclic)alkyl),
arylthioalkyl,

30

arylsulfonyalkyl,
(heterocyclic)thioalkyl,
(heterocyclic)sulfonylalkyl,
(heterocyclic)oxyalkyl,
arylalkoxyalkyl,
arylthioalkoxyalkyl,
arylalkylsulfonylalkyl,

(heterocyclic))alkoxyalkyl,
 (heterocyclic)thioalkoxyalkyl,
 (heterocyclic)alkylsulfonylalkyl,
 cycloalkyloxyalkyl,
 cycloalkylthioalkyl,
 cycloalkylsulfonylalkyl,
 cycloalkylalkoxyalkyl,
 cycloalkylthioalkoxyalkyl,
 cycloalkylalkylsulfonylalkyl,
 aminocarbonyl,
 alkylaminocarbonyl,
 dialkylaminocarbonyl,
 aroylalkyl,
 (heterocyclic)carbonylalkyl,
 polyhydroxyalkyl,
 aminocarbonylalkyl,
 alkylaminocarbonylalkyl,
 dialkylaminocarbonylalkyl,
 aryloxyalkyl, or
 alkylsulfonylalkyl,

wherein heterocyclic is pyridyl, thiazolyl, isothiazolyl,
 oxazolyl, isoxazolyl, furanyl, thienyl, tetrahydrofuranyl, tetrahydrothienyl and
 tetrahydro[2H]pyranyl and wherein the heterocycle is unsubstituted or substituted with
 one to three substituents independently selected from hydroxy, halo, amino, alkylamino,
 dialkylamino, alkoxy, polyalkoxy, haloalkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl,
 COOH, -SO₃H, lower alkenyl or lower alkyl; and

where PROTECTING GROUP is selected from the group consisting of *t*-
 butoxycarbonyl, benzyloxycarbonyl, formyl, trityl, acetyl, trichloroacetyl, dichloroacetyl,
 chloroacetyl, trifluoroacetyl, difluoroacetyl, fluoroacetyl, 4-phenylbenzyloxycarbonyl, 2-
 methylbenzyloxycarbonyl, 4-ethoxybenzyloxycarbonyl, 4-fluorobenzyloxycarbonyl, 4-
 chlorobenzyloxycarbonyl, 3-chlorobenzyloxycarbonyl, 2-chlorobenzyloxycarbonyl, 2,4-
 dichlorobenzyloxycarbonyl, 4-bromobenzyloxycarbonyl, 3-bromobenzyloxycarbonyl, 4-
 nitrobenzyloxycarbonyl, 4-cyanobenzyloxycarbonyl, 2-(4-xenyl)isopropoxycarbonyl, 1,1-
 diphenyleth-1-yloxycarbonyl, 1,1-diphenylprop-1-yloxycarbonyl, 2-phenylprop-2-

yloxy carbonyl, 2-(*p*-toluyl)prop-2-yloxy carbonyl, cyclopentanyloxy carbonyl, 1-
 methylcyclopentanyloxy carbonyl, cyclohexanyloxy carbonyl, 1-
 methylcyclohexanyloxy carbonyl, 2-methylcyclohexanyloxy carbonyl, 2-(4-
 toluylsulfonyl)ethoxy carbonyl, 2-(methylsulfonyl)ethoxy carbonyl, 2-
 5 (triphenylphosphino)ethoxy carbonyl, fluorenylmethoxy carbonyl, 2-
 (trimethylsilyl)ethoxy carbonyl, allyloxy carbonyl, 1-(trimethylsilylmethyl)prop-1-
 enyloxy carbonyl, 5-benzisoxalylmethoxy carbonyl, 4-acetoxybenzyloxy carbonyl, 2,2,2-
 trichloroethoxy carbonyl, 2-ethynyl-2-propoxy carbonyl, cyclopropylmethoxy carbonyl, 4-
 (decyloxy)benzyloxy carbonyl, isobornyloxy carbonyl and 1-piperidyloxy carbonyl, 9-
 10 fluorenylmethyl carbonate, $-CH-CH=CH_2$ and phenyl-C(=N)-H.

47. A protected compound according to claim 46,

where R_1 is:

$$-(\text{CH}_2)_{0-1}-(\text{R}_{1\text{-aryl}}), \text{ or}$$
$$-(\text{CH}_2)_{n1}-(\text{R}_1\text{-heteroaryl});$$

where R_A is:

-C₁-C₈ alkyl,

-(CH₂)₀₋₃-(C₃-C₇) cycloalkyl,

$$-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-aryl}},$$
$$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heteroaryl},$$
$$-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}},$$

-cyclopentyl or -cyclohexyl ring fused to R_A-aryl or R_A-heteroaryl or R_A-

heterocycle.

25 48. A protected compound according to claim 47

where R_1 is:

$$-(\text{CH}_2)-(\text{R}_{1-\text{aryl}}), \text{ or}$$
$$-(\text{CH}_2)-(\text{R}_1\text{-heteroaryl});$$

where R_2 is $-H$;

where R_3 is $-H$;

where R_A is:

-C₁-C₈ alkyl,

-(CH₂)₀₋₃-(C₃-C₇) cycloalkyl,

$$-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-aryl}},$$

-(CR_{A-x}R_{A-y})₀₋₄-R_{A-heteroaryl},

-(CR_{A-x}R_{A-y})₀₋₄-R_{A-heterocycle},

-cyclopentyl or -cyclohexyl ring fused to R_{A-aryl} or R_{A-heteroaryl} or R_{A-}

heterocycle.

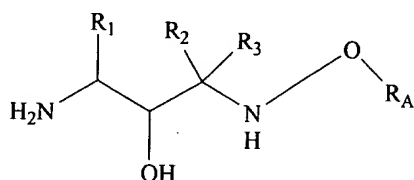
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49. A protected compound according to claim 46 where PROTECTING GROUP is *t*-butoxycarbonyl.

50. A protected compound according to claim 46 where PROTECTING GROUP is benzyloxycarbonyl.

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51. A compound of the formula (XII)



XII

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where R₁ is:

(I) C₁-C₆ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, C₁-C₇ alkyl (optionally substituted with C₁-C₃ alkyl and C₁-C₃ alkoxy), -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl, and -OC=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

20

(II) -CH₂-S(O)₀₋₂-(C₁-C₆ alkyl),

(III) -CH₂-CH₂-S(O)₀₋₂-(C₁-C₆ alkyl),

(IV) C₂-C₆ alkenyl with one or two double bonds, optionally substituted

25

with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(V) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(VI) $-(CH_2)_{n_1}-(R_{1-aryl})$ where n_1 is zero or one and where R_{1-aryl} is phenyl, 1-naphthyl, 2-naphthyl and indanyl, indenyl, dihydronaphthalyl, or tetralinyl optionally substituted with one, two, three or four of the following substituents on the aryl ring:

(A) C_1-C_6 alkyl optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, and C_1-C_3 alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(B) C_2-C_6 alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C_1-C_3 alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C_1-C_6 alkyl,

(C) C_2-C_6 alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C_1-C_3 alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C_1-C_6 alkyl,

(D) -F, Cl, -Br or -I,

(F) $-C_1-C_6$ alkoxy optionally substituted with one, two or three of -F,

(G) -NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are as defined below,

(H) -OH,

(I) -C≡N,

(J) C_3-C_7 cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C_1-C_3 alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C_1-C_6 alkyl,

(K) -CO-(C_1-C_4 alkyl),

(L) -SO₂-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(M) -CO-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, or

(N) -SO₂-(C_1-C_4 alkyl),

(VII) $-(CH_2)_{n_1}-(R_{1-heteroaryl})$ where n_1 is as defined above and where R_{1-heteroaryl} is selected from the group consisting of:

pyridinyl,

pyrimidinyl,

quinolinyl,

benzothieryl,

indolyl,
indolinyl,
pyridazinyl,
pyrazinyl,
5 isoquinolyl,
quinazoliny,
quinoxaliny,
phthalazinyl,
imidazolyl,
10 isoxazolyl,
pyrazolyl,
oxazolyl,
thiazolyl,
indoliziny,
15 indazolyl,
benzothiazolyl,
benzimidazolyl,
benzofuranyl,
furanyl,
20 thienyl,
pyrrolyl,
oxadiazolyl,
thiadiazolyl,
triazolyl,
25 tetrazolyl,
oxazolopyridiny,
imidazopyridiny,
isothiazolyl,
naphthyridiny,
30 cinnoliny,
carbazolyl,
beta-carboliny,
isochromanyl,
chromanyl,

5

tetrahydroisoquinolinyI,
isoindolinyI,
isobenzotetrahydrofuranyI,
isobenzotetrahydrothienyI,
isobenzothienyI,
benzoxazolyl,
pyridopyridinyI,

10

benzotetrahydrofuranyI,
benzotetrahydrothienyI,
purinyI,
benzodioxolyl,
triazinyI,

15

phenoxazinyI,
phenothiazinyI,
pteridinyI,
benzothiazolyl,
imidazopyridinyI,
imidazothiazolyl,

20

dihydrobenzisoxazinyI,
benzisoxazinyI,
benzoxazinyI,
dihydrobenziso-thiazinyI,

25

benzopyranyI,
benzothiopyranyI,
coumarinyI,
isocoumarinyI,
chromonyI,

30

chromanonyI,
pyridinyI-N-oxide,
tetrahydroquinolinyI
dihydroquinolinyI
dihydroquinolinonyI
dihydroisoquinolinonyI
dihydrocoumarinyI

dihydroisocoumarinyl
 isoindolinonyl
 benzodioxanyl
 benzoxazolinonyl
 5 pyrrolyl N-oxide,
 pyrimidinyl N-oxide,
 pyridazinyl N-oxide,
 pyrazinyl N-oxide,
 10 quinolinyl N-oxide,
 indolyl N-oxide,
 indolinyl N-oxide,
 isoquinolyl N-oxide,
 quinazolinyl N-oxide,
 quinoxalinyl N-oxide,
 15 phthalazinyl N-oxide,
 imidazolyl N-oxide,
 isoxazolyl N-oxide,
 oxazolyl N-oxide,
 thiazolyl N-oxide,
 20 indoliziny N-oxide,
 indazolyl N-oxide,
 benzothiazolyl N-oxide,
 benzimidazolyl N-oxide,
 pyrrolyl N-oxide,
 25 oxadiazolyl N-oxide,
 thiadiazolyl N-oxide,
 triazolyl N-oxide,
 tetrazolyl N-oxide,
 benzothiopyranyl S-oxide, and
 30 benzothiopyranyl S,S-dioxide,

where the $R_{1\text{-heteroaryl}}$ group is bonded to $-(CH_2)_{n1}-$ by any ring atom of the parent $R_{1\text{-heteroaryl}}$ group substituted by hydrogen such that the new bond to the $R_{1\text{-heteroaryl}}$ group replaces the hydrogen atom and its bond, where heteroaryl is optionally substituted with one, two, three or four of:

(1) C₁-C₆ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(2) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(3) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(4) -F, Cl, -Br or -I,

(6) -C₁-C₆ alkoxy optionally substituted with one, two, or three of -F,

(7) -NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are as defined below,

(8) -OH,

(9) -C≡N,

(10) C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(11) -CO-(C₁-C₄ alkyl),

(12) -SO₂-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(13) -CO-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, or

(14) -SO₂-(C₁-C₄ alkyl), with the proviso that when n₁ is zero R_{1-heteroaryl} is not bonded to the carbon chain by nitrogen; or

(VIII) -(CH₂)_{n1}-(R_{1-heterocycle}) where n₁ is as defined above and R_{1-heterocycle} is selected from the group consisting of:

morpholinyl,
thiomorpholinyl,
thiomorpholinyl S-oxide,
thiomorpholinyl S,S-dioxide,

5 piperazinyl,
 homopiperazinyl,
 pyrrolidinyl,
 pyrrolinyl,
 tetrahydropyranyl,
 piperidinyl,
 tetrahydrofuranyl,
 tetrahydrothienyl,
 homopiperidinyl,
 10 homomorpholinyl,
 homothiomorpholinyl,
 homothiomorpholinyl S,S-dioxide,
 oxazolidinonyl,
 dihydropyrazolyl,
 15 dihydropyrrolyl,
 dihydropyrazinyl,
 dihydropyridinyl,
 dihydropyrimidinyl,
 dihydrofuryl,
 20 dihydropyranyl,
 tetrahydrothienyl S-oxide,
 tetrahydrothienyl S,S-dioxide, and
 homothiomorpholinyl S-oxide,

where the $R_{1\text{-heterocycle}}$ group is bonded by any atom of the parent R_1 .

25 heterocycle group substituted by hydrogen such that the new bond to the $R_{1\text{-heterocycle}}$ group
 replaces the hydrogen atom and its bond, where heterocycle is optionally substituted with
 one, two, three or four:

(1) C_1 - C_6 alkyl optionally substituted with one, two or three
 substituents selected from the group consisting of C_1 - C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH,
 30 - $C\equiv N$, - CF_3 , C_1 - C_3 alkoxy, and - $NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(2) C_2 - C_6 alkenyl with one or two double bonds, optionally
 substituted with one, two or three substituents selected from the group consisting of -F, -

Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(3) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(4) -F, Cl, -Br or -I,

(5) C₁-C₆ alkoxy,

(6) -C₁-C₆ alkoxy optionally substituted with one, two, or three -F,

(7) -NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are as defined below,

(8) -OH,

(9) -C≡N,

(10) C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(11) -CO-(C₁-C₄ alkyl),

(12) -SO₂-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(13) -CO-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(14) -SO₂-(C₁-C₄ alkyl), or

(15) =O, with the proviso that when n₁ is zero R_{1-heterocycle} is not bonded to the carbon chain by nitrogen;

25

where R₂ is:

(I)-H,

(II) C₁-C₆ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH,

-SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(III) -(CH₂)₀₋₄-R₂₋₁ where R₂₋₁ is R_{1-aryl} or R_{1-heteroaryl} where R_{1-aryl} and R_{1-heteroaryl} are as defined above;

(IV) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(V) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl, or

(VI) -(CH₂)₀₋₄- C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl;

where R₃ is:

(I)-H,

(II) C₁-C₆ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(III) -(CH₂)₀₋₄-R₂₋₁ where R₂₋₁ is R_{1-aryl} or R_{1-heteroaryl} where R_{1-aryl} and R_{1-heteroaryl} are as defined above

(IV) C₂-C₆ alkenyl with one or two double bonds,

(V) C₂-C₆ alkynyl with one or two triple bonds; or

(VI) -(CH₂)₀₋₄- C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

and where R₂ and R₃ are taken together with the carbon to which they are attached to form a carbocycle of three, four, five, six, or seven carbon atoms, optionally

where one carbon atom is replaced by a heteroatom selected from the group consisting of -O-, -S-, -SO₂-, and -NR_{N-2}-, where R_{N-2} is selected from the group consisting of:

(a) -H,

(b) -C₁-C₆ alkyl optionally substituted with one substituent selected from the group consisting of:

(i) -OH, and

(ii) -NH₂,

(c) -C₁-C₆ alkyl optionally substituted with one, two, or three -F, -Cl, -Br, or -I,

- (d) $-C_3-C_7$ cycloalkyl,
 (e) $-(C_1-C_2 \text{ alkyl})-(C_3-C_7 \text{ cycloalkyl})$,
 (f) $-(C_1-C_6 \text{ alkyl})-O-(C_1-C_3 \text{ alkyl})$,
 (g) $-C_2-C_6$ alkenyl with one or two double bonds,
 (h) $-C_2-C_6$ alkynyl with one or two triple bonds,
 (i) $-C_1-C_6$ alkyl chain with one double bond and one
 triple bond,

- (j) $-R_{1-\text{aryl}}$ where $R_{1-\text{aryl}}$ is as defined above, and
 (k) $-R_{1-\text{heteroaryl}}$ where $R_{1-\text{heteroaryl}}$ is as defined above;

where R_N is:

- (I) $R_{N-1}-X_N$ where X_N is selected from the group consisting of:
 (A) $-\text{CO}-$,
 (B) $-\text{SO}_2-$,
 (C) $-(\text{CR}'\text{R}'')_{1-6}$ where R' and R'' are the same or different and are
 $-\text{H}$ and C_1-C_4 alkyl,
 (D) $-\text{CO}-(\text{CR}'\text{R}'')_{1-6}-X_{N-1}$ where X_{N-1} is selected from the group
 consisting of $-\text{O}-$, $-\text{S}-$ and $-\text{NR}'-$ and where R' and R'' are as defined above, and
 (E) a single bond;

where R_{N-1} is selected from the group consisting of:

- (A) $R_{N-\text{aryl}}$ where $R_{N-\text{aryl}}$ is phenyl, 1-naphthyl, 2-naphthyl,
 tetralinyl, indanyl, 6,7,8,9-tetrahydro-5H-benzo[a]cycloheptenyl, or dihydronaphthyl
 optionally substituted with one, two or three of the following substituents which can be
 the same or different and are:
 (1) C_1-C_6 alkyl, optionally substituted with one, two or
 three substituents selected from the group consisting of C_1-C_3 alkyl, $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$,
 $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_3 alkoxy, and $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined
 above,
 (2) $-\text{OH}$,
 (3) $-\text{NO}_2$,
 (4) $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$,
 (5) $-\text{CO}-\text{OH}$,
 (6) $-\text{C}\equiv\text{N}$,

(7) $-(CH_2)_{0-4}-CO-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are selected from the group consisting of:

- (a) -H,
- (b) $-C_1-C_6$ alkyl optionally substituted with one substituent selected from the group consisting of:
 - (i) -OH, and
 - (ii) $-NH_2$,
 - (c) $-C_1-C_6$ alkyl optionally substituted with one, two, or three -F, -Cl, -Br, or -I,
 - (d) $-C_3-C_7$ cycloalkyl,
 - (e) $-(C_1-C_2 \text{ alkyl})-(C_3-C_7 \text{ cycloalkyl})$,
 - (f) $-(C_1-C_6 \text{ alkyl})-O-(C_1-C_3 \text{ alkyl})$,
 - (g) $-C_2-C_6$ alkenyl with one or two double bonds,
 - (h) $-C_2-C_6$ alkynyl with one or two triple bonds,
 - (i) $-C_1-C_6$ alkyl chain with one double bond and one triple bond,
 - (j) $-R_{1-aryl}$ where R_{1-aryl} is as defined above, and
 - (k) $-R_{1-heteroaryl}$ where $R_{1-heteroaryl}$ is as defined above,
- (8) $-(CH_2)_{0-4}-CO-(C_1-C_{12} \text{ alkyl})$,
- (9) $-(CH_2)_{0-4}-CO-(C_2-C_{12} \text{ alkenyl with one, two or three double bonds})$,
- (10) $-(CH_2)_{0-4}-CO-(C_2-C_{12} \text{ alkynyl with one, two or three triple bonds})$,
- (11) $-(CH_2)_{0-4}-CO-(C_3-C_7 \text{ cycloalkyl})$,
- (12) $-(CH_2)_{0-4}-CO-R_{1-aryl}$ where R_{1-aryl} is as defined above,
- (13) $-(CH_2)_{0-4}-CO-R_{1-heteroaryl}$ where $R_{1-heteroaryl}$ is as defined above,
- (14) $-(CH_2)_{0-4}-CO-R_{1-heterocycle}$ where $R_{1-heterocycle}$ is as defined above,
- (15) $-(CH_2)_{0-4}-CO-R_{N-4}$ where R_{N-4} is selected from the group consisting of morpholinyl, thiomorpholinyl, piperazinyl, piperidinyl, homomorpholinyl, homothiomorpholinyl, homothiomorpholinyl S-oxide, homothiomorpholinyl S,S-dioxide, pyrrolinyl and pyrrolidinyl where each group is optionally substituted with one, two, three, or four of C_1-C_6 alkyl,

(16) $-(CH_2)_{0-4}-CO-O-R_{N-5}$ where R_{N-5} is selected from the group consisting of:

- (a) C_1-C_6 alkyl,
- (b) $-(CH_2)_{0-2}-(R_{1-aryl})$ where R_{1-aryl} is as defined above,
- (c) C_2-C_6 alkenyl containing one or two double bonds,
- (d) C_2-C_6 alkynyl containing one or two triple bonds,
- (e) C_3-C_7 cycloalkyl, and
- (f) $-(CH_2)_{0-2}-(R_{1-heteroaryl})$ where $R_{1-heteroaryl}$ is as defined above,

(17) $-(CH_2)_{0-4}-SO_2-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are as defined above,

- (18) $-(CH_2)_{0-4}-SO-(C_1-C_8 \text{ alkyl})$,
- (19) $-(CH_2)_{0-4}-SO_2-(C_1-C_{12} \text{ alkyl})$,
- (20) $-(CH_2)_{0-4}-SO_2-(C_3-C_7 \text{ cycloalkyl})$,
- (21) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-O-R_{N-5}$ where R_{N-5} can be the same or different and is as defined above,

(22) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-N(R_{N-5})_2$, where R_{N-5} can be the same or different and is as defined above,

(23) $-(CH_2)_{0-4}-N-CS-N(R_{N-5})_2$, where R_{N-5} can be the same or different and is as defined above,

(24) $-(CH_2)_{0-4}-N(-H \text{ or } R_{N-5})-CO-R_{N-2}$ where R_{N-5} and R_{N-2} can be the same or different and are as defined above,

(25) $-(CH_2)_{0-4}-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} can be the same or different and are as defined above,

(26) $-(CH_2)_{0-4}-R_{N-4}$ where R_{N-4} is as defined above,

(27) $-(CH_2)_{0-4}-O-CO-(C_1-C_6 \text{ alkyl})$,

(28) $-(CH_2)_{0-4}-O-P(O)-(OR_{N-aryl-1})_2$ where $R_{N-aryl-1}$ is $-H$ or C_1-C_4 alkyl,

(29) $-(CH_2)_{0-4}-O-CO-N(R_{N-5})_2$ where R_{N-5} is as defined

above,

(30) $-(CH_2)_{0-4}-O-CS-N(R_{N-5})_2$ where R_{N-5} is as defined above,

(31) $-(CH_2)_{0-4}-O-(R_{N-5})_2$ where R_{N-5} is as defined above,

(32) $-(CH_2)_{0-4}-O-(R_{N-5})_2-COOH$ where R_{N-5} is as defined above,

(33) $-(CH_2)_{0-4}-S-(R_{N-5})_2$ where R_{N-5} is as defined above,

(34) $-(CH_2)_{0-4}-O-(C_1-C_6 \text{ alkyl optionally substituted with one, two, three, four, or five of } -F),$

(35) C_3-C_7 cycloalkyl,

(36) C_2-C_6 alkenyl with one or two double bonds optionally substituted with C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, or $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(37) C_2-C_6 alkynyl with one or two triple bonds optionally substituted with C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, or $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(38) $-(CH_2)_{0-4}-N(-H \text{ or } R_{N-5})-SO_2-R_{N-2}$ where R_{N-5} and R_{N-2} can be the same or different and are as described above, or

(39) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl,

(B) $-R_{N-heteroaryl}$ where $R_{N-heteroaryl}$ is selected from the group consisting of:

pyridinyl,
pyrimidinyl,
quinolinyl,
benzothienyl,
indolyl,
indolinyl,
pyridazinyl,
pyrazinyl,
isoindolyl,
isoquinolyl,
quinazolinyl,
quinoxalinyl,
phthalazinyl,

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imidazolyl,
isoxazolyl,
pyrazolyl,
oxazolyl,
thiazolyl,
indolizinyI,
indazolyl,
benzothiazolyl,
benzimidazolyl,
benzofuranyl,
furanyl,
thienyl,
pyrrolyl,
oxadiazolyl,
thiadiazolyl,
triazolyl,
tetrazolyl,
oxazolopyridinyl,
imidazopyridinyl,
isothiazolyl,
naphthyridinyl,
cinnolinyI,
carbazolyl,
beta-carbolinyI,
isochromanyl,
chromanyl,
tetrahydroisoquinolinyI,
isoindolinyI,
isobenzotetrahydrofuranyl,
isobenzotetrahydrothienyl,
isobenzothieryl,
benzoxazolyl,
pyridopyridinyl,
benzotetrahydrofuranyl,

5 benzotetrahydrothienyl,
purinyl,
benzodioxolyl,
triazinyl,
phenoxazinyl,
phenothiazinyl,
pteridinyl,
benzothiazolyl,
10 imidazopyridinyl,
imidazothiazolyl,
dihydrobenzisoxazinyl,
benzisoxazinyl,
benzoxazinyl,
15 dihydrobenzisothiazinyl,
benzopyranyl,
benzothiopyranyl,
coumarinyl,
isocoumarinyl,
20 chromonyl,
chromanonyl,
pyridinyl-N-oxide,
tetrahydroquinolinyl,
dihydroquinolinyl,
25 dihydroquinolinonyl,
dihydroisoquinolinonyl,
dihydrocoumarinyl,
dihydroisocoumarinyl,
isoindolinonyl,
30 benzodioxanyl,
benzoxazolinonyl,
pyrrolyl N-oxide,
pyrimidinyl N-oxide,
pyridazinyl N-oxide,
pyrazinyl N-oxide,

5 quinoliny N-oxide,
 indolyl N-oxide,
 indoliny N-oxide,
 isoquinolyl N-oxide,
 quinazolinyl N-oxide,
 quinoxaliny N-oxide,
 phthalazinyl N-oxide,
 imidazolyl N-oxide,
 10 isoxazolyl N-oxide,
 oxazolyl N-oxide,
 thiazolyl N-oxide,
 indoliziny N-oxide,
 indazolyl N-oxide,
 15 benzothiazolyl N-oxide,
 benzimidazolyl N-oxide,
 pyrrolyl N-oxide,
 oxadiazolyl N-oxide,
 thiadiazolyl N-oxide,
 20 triazolyl N-oxide,
 tetrazolyl N-oxide,
 benzothiopyranyl S-oxide, and
 benzothiopyranyl S,S-dioxide

where the $R_{N\text{-heteroaryl}}$ group is bonded by any atom of the parent $R_{N\text{-heteroaryl}}$ group substituted by hydrogen such that the new bond to the $R_{N\text{-heteroaryl}}$ group
 25 replaces the hydrogen atom and its bond, where heteroaryl is optionally substituted with one, two, three, or four of:

(1) $C_1\text{-}C_6$ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of $C_1\text{-}C_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C \equiv N, -CF₃, $C_1\text{-}C_3$ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined
 30 above,

(2) -OH,

(3) -NO₂,

(4) -F, -Cl, -Br, or -I,

(5) -CO-OH,

(6) -C≡N,

(7) $-(CH_2)_{0-4}-CO-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are selected from the group consisting of:

5 (a) -H,

(b) -C₁-C₆ alkyl optionally substituted with one substituent selected from the group consisting of:

(i) -OH, and

(ii) -NH₂,

10 (c) -C₁-C₆ alkyl optionally substituted with one, two, or three -F, -Cl, -Br, -I,

(d) -C₃-C₇ cycloalkyl,

(e) -(C₁-C₂ alkyl)-(C₃-C₇ cycloalkyl),

(f) -(C₁-C₆ alkyl)-O-(C₁-C₃ alkyl),

15 (g) -C₂-C₆ alkenyl with one or two double bonds,

(h) -C₂-C₆ alkynyl with one or two triple bonds,

(i) -C₁-C₆ alkyl chain with one double bond and one triple bond,

(j) -R_{1-aryl} where R_{1-aryl} is as defined above,

20 (k) -R_{1-heteroaryl} where R_{1-heteroaryl} is as defined above,

(8) $-(CH_2)_{0-4}-CO-(C_1-C_{12} \text{ alkyl})$,

(9) $-(CH_2)_{0-4}-CO-(C_2-C_{12} \text{ alkenyl with one, two or three double bonds})$,

25 (10) $-(CH_2)_{0-4}-CO-(C_2-C_{12} \text{ alkynyl with one, two or three triple bonds})$,

(11) $-(CH_2)_{0-4}-CO-(C_3-C_7 \text{ cycloalkyl})$,

(12) $-(CH_2)_{0-4}-CO-R_{1-aryl}$ where R_{1-aryl} is as defined above,

(13) $-(CH_2)_{0-4}-CO-R_{1-heteroaryl}$ where R_{1-heteroaryl} is as defined above,

30 (14) $-(CH_2)_{0-4}-CO-R_{1-heterocycle}$ where R_{1-heterocycle} is as defined above,

(15) $-(CH_2)_{0-4}-CO-R_{N-4}$ where R_{N-4} is selected from the group consisting of morpholinyl, thiomorpholinyl, piperazinyl, piperidinyl,

homomorpholinyl, homothiomorpholinyl, homothiomorpholinyl S-oxide, homothiomorpholinyl S,S-dioxide, pyrrolinyl and pyrrolidinyl where each group is optionally substituted with one, two, three, or four of C₁-C₆ alkyl,

- (16) $-(CH_2)_{0-4}-CO-O-R_{N-5}$ where R_{N-5} is selected from the
- 5 group consisting of:
- (a) C₁-C₆ alkyl,
- (b) $-(CH_2)_{0-2}-(R_{1-aryl})$ where R_{1-aryl} is as defined
- above,
- (c) C₂-C₆ alkenyl containing one or two double
- 10 bonds,
- (d) C₂-C₆ alkynyl containing one or two triple
- bonds,
- (e) C₃-C₇ cycloalkyl, and
- (f) $-(CH_2)_{0-2}-(R_{1-heteroaryl})$ where R_{1-heteroaryl} is as
- 15 defined above,
- (17) $-(CH_2)_{0-4}-SO_2-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are as
- defined above,
- (18) $-(CH_2)_{0-4}-SO-(C_1-C_8 \text{ alkyl})$,
- (19) $-(CH_2)_{0-4}-SO_2-(C_1-C_{12} \text{ alkyl})$,
- 20 (20) $-(CH_2)_{0-4}-SO_2-(C_3-C_7 \text{ cycloalkyl})$,
- (21) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-O-R_{N-5}$ where R_{N-5} can be
- the same or different and is as defined above,
- (22) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-N(R_{N-5})_2$, where R_{N-5} can
- be the same or different and is as defined above,
- 25 (23) $-(CH_2)_{0-4}-N-CS-N(R_{N-5})_2$, where R_{N-5} can be the same
- or different and is as defined above,
- (24) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-R_{N-2}$ where R_{N-5} and R_{N-2}
- can be the same or different and are as defined above,
- (25) $-(CH_2)_{0-4}-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} can be the
- 30 same or different and are as defined above,
- (26) $-(CH_2)_{0-4}-R_{N-4}$ where R_{N-4} is as defined above,
- (27) $-(CH_2)_{0-4}-O-CO-(C_1-C_6 \text{ alkyl})$,
- (28) $-(CH_2)_{0-4}-O-P(O)-(OR_{N-aryl-1})_2$ where R_{N-aryl-1} is -H or
- C₁-C₄ alkyl,

(29) $-(CH_2)_{0-4}-O-CO-N(R_{N-5})_2$ where R_{N-5} is as defined above,

(30) $-(CH_2)_{0-4}-O-CS-N(R_{N-5})_2$ where R_{N-5} is as defined above,

5 (31) $-(CH_2)_{0-4}-O-(R_{N-5})_2$ where R_{N-5} is as defined above,

(32) $-(CH_2)_{0-4}-O-(R_{N-5})_2-COOH$ where R_{N-5} is as defined above,

(33) $-(CH_2)_{0-4}-S-(R_{N-5})_2$ where R_{N-5} is as defined above,

10 (34) $-(CH_2)_{0-4}-O-(C_1-C_6 \text{ alkyl optionally substituted with one, two, three, four, or five of } -F),$

(35) C_3-C_7 cycloalkyl,

(36) C_2-C_6 alkenyl with one or two double bonds optionally substituted with C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, or $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

15 (37) C_2-C_6 alkynyl with one or two triple bonds optionally substituted with C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, or $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(38) $-(CH_2)_{0-4}-N(-H \text{ or } R_{N-5})-SO_2-R_{N-2}$ where R_{N-5} and R_{N-2} can be the same or different and are as defined above, or

20 (39) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl,

(C) $R_{N-aryl}-W-R_{N-aryl}$, where R_{N-aryl} can be the same or different,

(D) $R_{N-aryl}-W-R_{N-heteroaryl}$,

(E) $R_{N-aryl}-W-R_{N-1-heterocycle}$, wherein $R_{N-1-heterocycle}$ is the same as $R_{1-heterocycle}$, and $R_{1-heterocycle}$ is as defined above

25 (F) $R_{N-heteroaryl}-W-R_{N-aryl}$,

(G) $R_{N-heteroaryl}-W-R_{N-heteroaryl}$,

(H) $R_{N-heteroaryl}-W-R_{N-1-heterocycle}$,

(I) $R_{N-heterocycle}-W-R_{N-aryl}$, wherein $R_{N-heterocycle}$ is the same as $R_{1-heterocycle}$, and $R_{1-heterocycle}$ is as defined above, and R_{N-aryl} is as defined above,

30 (J) $R_{N-heterocycle}-W-R_{N-heteroaryl}$, and

(K) $R_{N-heterocycle}-W-R_{N-1-heterocycle}$,

where W is

(21) $-(CH_2)_{0-4}-$,

(22) $-O-$,

(23) $-S(O)_{0-2}-$,

(24) $-N(R_{N-5})-$ where R_{N-5} is as defined above, or

(5) $-CO-$;

5 (II) $-CO-(C_1-C_{10} \text{ alkyl})$ where alkyl is optionally substituted with one three substituents selected from the group consisting of:

(A) $-OH$,

(B) $-C_1-C_6 \text{ alkoxy}$,

(C) $-C_1-C_6 \text{ thioalkoxy}$,

10 (D) $-CO-O-R_{N-8}$ where R_{N-8} is $-H$, $C_1-C_6 \text{ alkyl}$ or $-phenyl$,

(E) $-CO-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(F) $-CO-R_{N-4}$ where R_{N-4} is as defined above,

(G) $-SO_2-(C_1-C_8 \text{ alkyl})$,

15 (H) $-SO_2-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(I) $-NH-CO-(C_1-C_6 \text{ alkyl})$,

(J) $-NH-CO-O-R_{N-8}$ where R_{N-8} is as defined above,

(K) $-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(L) $-R_{N-4}$ where R_{N-4} is as defined above,

(M) $-O-CO-(C_1-C_6 \text{ alkyl})$,

(N) $-O-CO-NR_{N-8}R_{N-8}$ where R_{N-8} are the same or different and are as defined above,

25 (O) $-O-(C_1-C_5 \text{ alkyl})-COOH$,

(P) $-O-(C_1-C_6 \text{ alkyl})$ optionally substituted with one, two, or three of $-F$, $-Cl$, $-Br$, or $-I$,

(Q) $-NH-SO_2-(C_1-C_6 \text{ alkyl})$, and

(R) $-F$, or $-Cl$,

30 (III) $-CO-(C_1-C_6 \text{ alkyl})-O-(C_1-C_6 \text{ alkyl})$ where alkyl is optionally substituted with one, two, or three substituents selected from the group consisting of:

(A) $-OH$,

- (B) -C₁-C₆ alkoxy,
(C) -C₁-C₆ thioalkoxy,
(D) -CO-O-R_{N-8} where R_{N-8} is -H, C₁-C₆ alkyl or -phenyl,
(E) -CO-NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are the same or different
5 and are as defined above,
(F) -CO-R_{N-4} where R_{N-4} is as defined above,
(G) -SO₂-(C₁-C₈ alkyl),
(H) -SO₂-NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are the same or different
and are as defined above,
10 (I) -NH-CO-(C₁-C₆ alkyl),
(J) -NH-CO-O-R_{N-8} where R_{N-8} is as defined above,
(K) -NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are the same or different and
are as defined above,
(L) -R_{N-4} where R_{N-4} is as defined above,
15 (M) -O-CO-(C₁-C₆ alkyl),
(N) -O-CO-NR_{N-8}R_{N-8} where R_{N-8} are the same or different and are
as defined above,
(O) -O-(C₁-C₅ alkyl)-COOH,
(P) -O-(C₁-C₆ alkyl optionally substituted with one, two, or three of
20 -F, -Cl, -Br, or -I),
(Q) -NH-SO₂-(C₁-C₆ alkyl), and
(R) -F, or -Cl,
(IV) -CO-(C₁-C₆ alkyl)-S-(C₁-C₆ alkyl) where alkyl is optionally
substituted with one, two, or three of substituents selected from the group consisting of:
25 (A) -OH,
(B) -C₁-C₆ alkoxy,
(C) -C₁-C₆ thioalkoxy,
(D) -CO-O-R_{N-8} where R_{N-8} is as defined above,
(E) -CO-NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are the same or different
30 and are as defined above,
(F) -CO-R_{N-4} where R_{N-4} is as defined above,
(G) -SO₂-(C₁-C₈ alkyl),

(H) $-\text{SO}_2-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(I) $-\text{NH}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

(J) $-\text{NH}-\text{CO}-\text{O}-\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is as defined above,

5 (K) $-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(L) $-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(M) $-\text{O}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

10 (N) $-\text{O}-\text{CO}-\text{NR}_{\text{N-8}}\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ are the same or different and are as defined above,

(O) $-\text{O}-(\text{C}_1-\text{C}_5 \text{ alkyl})-\text{COOH}$,

(P) $-\text{O}-(\text{C}_1-\text{C}_6 \text{ alkyl})$ optionally substituted with one, two, or three of $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, or $-\text{I}$,

(Q) $-\text{NH}-\text{SO}_2-(\text{C}_1-\text{C}_6 \text{ alkyl})$, and

15 (R) $-\text{F}$, or $-\text{Cl}$,

(V) $-\text{CO}-\text{CH}(-(\text{CH}_2)_{0-2}-\text{O}-\text{R}_{\text{N-10}})-(\text{CH}_2)_{0-2}-\text{R}_{\text{N-aryl}}/\text{R}_{\text{N-heteroaryl}}$ where $\text{R}_{\text{N-aryl}}$ and $\text{R}_{\text{N-heteroaryl}}$ are as defined above, where $\text{R}_{\text{N-10}}$ is selected from the group consisting of:

(A) $-\text{H}$,

(B) $\text{C}_1-\text{C}_6 \text{ alkyl}$,

20 (C) $\text{C}_3-\text{C}_7 \text{ cycloalkyl}$,

(D) $\text{C}_2-\text{C}_6 \text{ alkenyl}$ with one double bond,

(E) $\text{C}_2-\text{C}_6 \text{ alkynyl}$ with one triple bond,

(F) $\text{R}_{\text{I-aryl}}$ where $\text{R}_{\text{I-aryl}}$ is as defined above, and

(G) $\text{R}_{\text{N-heteroaryl}}$ where $\text{R}_{\text{N-heteroaryl}}$ is as defined above, or

25 (VI) $-\text{CO}-(\text{C}_3-\text{C}_8 \text{ cycloalkyl})$ where alkyl is optionally substituted with one or two substituents selected from the group consisting of:

(A) $-(\text{CH}_2)_{0-4}-\text{OH}$,

(B) $-(\text{CH}_2)_{0-4}-\text{C}_1-\text{C}_6 \text{ alkoxy}$,

(C) $-(\text{CH}_2)_{0-4}-\text{C}_1-\text{C}_6 \text{ thioalkoxy}$,

30 (D) $-(\text{CH}_2)_{0-4}-\text{CO}-\text{O}-\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is $-\text{H}$, $\text{C}_1-\text{C}_6 \text{ alkyl}$ or phenyl,

(E) $-(\text{CH}_2)_{0-4}-\text{CO}-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(F) $-(\text{CH}_2)_{0-4}-\text{CO}-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(G) $-(\text{CH}_2)_{0-4}-\text{SO}_2-(\text{C}_1-\text{C}_8 \text{ alkyl})$,

(H) $-(\text{CH}_2)_{0-4}-\text{SO}_2-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(I) $-(\text{CH}_2)_{0-4}-\text{NH}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

5 (J) $-\text{NH}-\text{CO}-\text{O}-\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is as defined above,

(K) $-(\text{CH}_2)_{0-4}-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(L) $-(\text{CH}_2)_{0-4}-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(M) $-\text{O}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

10 (N) $-\text{O}-\text{CO}-\text{NR}_{\text{N-8}}\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ are the same or different and are as defined above,

(O) $-\text{O}-(\text{C}_1-\text{C}_5 \text{ alkyl})-\text{COOH}$,

(P) $-\text{O}-(\text{C}_1-\text{C}_6 \text{ alkyl})$ optionally substituted with one, two, or three of $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, or $-\text{I}$,

15 (Q) $-\text{NH}-\text{SO}_2-(\text{C}_1-\text{C}_6 \text{ alkyl})$, and

(R) $-\text{F}$, or $-\text{Cl}$;

where R_A is:

(I) C_1-C_{10} alkyl optionally substituted with one, two or three substituents
 20 selected from the group consisting of C_1-C_3 alkyl, $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$, $-\text{OH}$,
 $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_6 alkoxy, $-\text{O}-\text{phenyl}$, $-\text{NR}_{1-\text{a}}\text{R}_{1-\text{b}}$ where $\text{R}_{1-\text{a}}$ and $\text{R}_{1-\text{b}}$ are as defined
 above, $-\text{OC}=\text{O NR}_{1-\text{a}}\text{R}_{1-\text{b}}$ where $\text{R}_{1-\text{a}}$ and $\text{R}_{1-\text{b}}$ are as defined above, $-\text{S}(=\text{O})_{0-2} \text{R}_{1-\text{a}}$ where
 $\text{R}_{1-\text{a}}$ is as defined above, $-\text{NR}_{1-\text{a}}\text{C}=\text{O NR}_{1-\text{a}}\text{R}_{1-\text{b}}$ where $\text{R}_{1-\text{a}}$ and $\text{R}_{1-\text{b}}$ are as defined above, $-\text{C}=\text{O NR}_{1-\text{a}}\text{R}_{1-\text{b}}$ where $\text{R}_{1-\text{a}}$ and $\text{R}_{1-\text{b}}$ are as defined above, and $-\text{S}(=\text{O})_2 \text{NR}_{1-\text{a}}\text{R}_{1-\text{b}}$ where $\text{R}_{1-\text{a}}$
 25 a and $\text{R}_{1-\text{b}}$ are as defined above,

(II) $-(\text{CH}_2)_{0-3}-(\text{C}_3-\text{C}_8)$ cycloalkyl where cycloalkyl can be optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkCyl, $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_6 alkoxy, $-\text{O}-\text{phenyl}$, $-\text{CO}-\text{OH}$, $-\text{CO}-\text{O}-(\text{C}_1-\text{C}_4 \text{ alkyl})$, and $-\text{NR}_{1-\text{a}}\text{R}_{1-\text{b}}$ where $\text{R}_{1-\text{a}}$ and $\text{R}_{1-\text{b}}$ are as defined above,

30 (III) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-aryl}}$ where $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are

(A) $-\text{H}$,

(B) C_1-C_4 alkyl optionally substituted with one or two $-\text{OH}$,

(C) C₁-C₄ alkoxy optionally substituted with one, two, or three of - F,

(D) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl,

(E) C₂-C₆ alkenyl containing one or two double bonds,

5 (F) C₂-C₆ alkynyl containing one or two triple bonds, or

(G) phenyl,

and where R_{A-x} and R_{A-y} are taken together with the carbon to which they are attached to form a carbocycle of three, four, five, six or seven carbon atoms, optionally where one carbon atom is replaced by a heteroatom selected from the group
10 consisting of -O-, -S-, -SO₂-, and -NR_{N-2}- and R_{A-aryl} is the same as R_{N-aryl},

(IV) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-heteroaryl} where R_{A-heteroaryl} is the same as R_{N-heteroaryl} and R_{A-x} and R_{A-y} are as defined above,

(V) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-aryl}-R_{A-aryl} where R_{A-aryl}, R_{A-x} and R_{A-y} are as defined above,

15 (VI) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-aryl}-R_{A-heteroaryl} where R_{A-aryl}, R_{A-heteroaryl}, R_{A-x} and R_{A-y} are as defined above,

(VII) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-heteroaryl}-R_{A-aryl} where R_{A-heteroaryl}, R_{A-aryl}, R_{A-x} and R_{A-y} are as defined above,

(VIII) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-heteroaryl}-R_{A-heteroaryl} where R_{A-heteroaryl}, R_{A-x} and R_{A-y} are as defined above,
20

(IX) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-aryl}-R_{A-heterocycle} where R_{A-heterocycle} is defined as R₁-heterocycle, and where R_{A-aryl}, R_{A-x} and R_{A-y} are as defined above,

(X) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-heteroaryl}-R_{A-heterocycle} where R_{A-heteroaryl}, R_{A-heterocycle}, R_{A-x} and R_{A-y} are as defined above,

25 (XI) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-heterocycle}-R_{A-aryl} where R_{A-heterocycle}, R_{A-aryl}, R_{A-x} and R_{A-y} are as defined above,

(XII) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-heterocycle}-R_{A-heteroaryl} where R_{A-heterocycle}, R_{A-heteroaryl}, R_{A-x} and R_{A-y} are as defined above,

(XIII) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-heterocycle}-R_{A-heterocycle} where R_{A-heterocycle}, R_{A-x} and R_{A-y} are as defined above,
30

(XIV) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-heterocycle} where R_{A-heterocycle}, R_{A-x} and R_{A-y} are as defined above,

(XV) -[C(R_{A-1})(R_{A-2})]₁₋₃-CO-N-(R_{A-3})₂ where R_{A-1} and R_{A-2} are the same or different and are selected from the group consisting of:

(A) -H,

(B) -C₁-C₆ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(C) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(D) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(E) -(CH₂)₁₋₂-S(O)₀₋₂-(C₁-C₆ alkyl),
 (F) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(G) -(C₁-C₄ alkyl)-R_{A'-aryl} where R_{A'-aryl} is as defined for R_{1-aryl},
 (H) -(C₁-C₄ alkyl)-R_{A-heteroaryl} where R_{A-heteroaryl} is as defined above,
 (I) -(C₁-C₄ alkyl)-R_{A-heterocycle} where R_{A-heterocycle} is as defined above,
 (J) -R_{A-heteroaryl} where R_{A-heteroaryl} is as defined above,
 (K) -R_{A-heterocycle} where R_{A-heterocycle} is as defined above,
 (M) -(CH₂)₁₋₄-R_{A-4}-(CH₂)₀₋₄-R_{A'-aryl} where R_{A-4} is -O-, -S- or -NR_{A-5}- where R_{A-5} is C₁-C₆ alkyl, and where R_{A'-aryl} is defined above,

(N) -(CH₂)₁₋₄-R_{A-4}-(CH₂)₀₋₄-R_{A-heteroaryl} where R_{A-4} and R_{A-heteroaryl} are as defined above, and

(O) -R_{A'-aryl} where R_{A'-aryl} is as defined above,

and where R_{A-3} is the same or different and is:

(A) -H,

(B) -C₁-C₆ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH,

-SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(C) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(D) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(E) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(F) -R_{A'-aryl} where R_{A'-aryl} is as defined above,

(G) -R_{A-heteroaryl} where R_{A-heteroaryl} is as defined above,

(H) -R_{A-heterocycle} where R_{A-heterocycle} is as defined above,

(I) -(C₁-C₄ alkyl)-R_{A'-aryl} where R_{A'-aryl} is as defined above,

(J) -(C₁-C₄ alkyl)-R_{A-heteroaryl} where R_{A-heteroaryl} is as defined above,

(K) -(C₁-C₄ alkyl)-R_{A-heterocycle} where R_{A-heterocycle} is as defined above, or

(XVI) -CH(R_{A-aryl})₂ where R_{A-aryl} are the same or different and are as defined above,

(XVII) -CH(R_{A-heteroaryl})₂ where R_{A-heteroaryl} are the same or different and are as defined above,

(XVIII) -CH(R_{A-aryl})(R_{A-heteroaryl}) where R_{A-aryl} and R_{A-heteroaryl} are as defined above,

(XIX) -cyclopentyl, -cyclohexyl, or -cycloheptyl ring fused to R_{A-aryl}, R_{A-heteroaryl}, R_{A-heterocycle} where R_{A-aryl} or R_{A-heteroaryl} or R_{A-heterocycle} are as defined above where one carbon of cyclopentyl, cyclohexyl, or -cycloheptyl is optionally replaced with NH, NR_{N-5}, O, or S(=O)₀₋₂, and where cyclopentyl, cyclohexyl, or -cycloheptyl can be optionally substituted with one or two -C₁-C₃ alkyl, -F, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, =O, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(XX) C₂-C₁₀ alkenyl containing one or two double bonds optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

5 (XXI) C₂-C₁₀ alkynyl containing one or two triple bonds optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(XXI) -(CH₂)₀₋₁-CHR_{A-6}-(CH₂)₀₋₁-R_{A-aryl} where R_{A-aryl} is as defined above
10 and R_{A-6} is -(CH₂)₀₋₆-OH,

(XXII) -(CH₂)₀₋₁-CHR_{A-6}-(CH₂)₀₋₁-R_{A-heteroaryl} where R_{A-heteroaryl} and R_{A-6} is as defined above,

(XXIII) -CH(-R_{A-aryl} or R_{A-heteroaryl})-CO-O(C₁-C₄ alkyl) where R_{A-aryl} and R_{A-heteroaryl} are as defined above,

15 (XXIV) -CH(-CH₂-OH)-CH(-OH)-micro-NO₂,

(XXV) (C₁-C₆ alkyl)-O-(C₁-C₆ alkyl)-OH,

(XXVII) -CH₂-NH-CH₂-CH(-O-CH₂-CH₃)₂,

(XXVIII) -H,

(XXIX) -(CH₂)₀₋₆-C(=NR_{1-a})(NR_{1-a}R_{1-b}) where R_{1-a} and R_{1-b} are as defined
20 above; or

(XXX)

-C=OC(HR₆)NHR₇, where R₆ and R₇ are as defined below,

-C=OR₇, where R₇ is as defined below,

-C=OOR₇, where R₇ is as defined below, or

25 -SOOR₇ where R₇ is as defined below,

wherein R₆ is:

hydrogen,

C₁ - C₃ alkyl,

phenyl,

30 thioalkoxyalkyl,

alkyl substituted aryl,

cycloalkyl,

cycloalkylalkyl,

hydroxyalkyl,
alkoxyalkyl,
aryloxyalkyl,
haloalkyl,
5 carboxyalkyl,
alkoxycarbonylalkyl,
aminoalkyl,
(N-protected)aminoalkyl,
alkylaminoalkyl,
10 ((N-protected)(alkyl)amino)alkyl,
dialkylaminoalkyl,
guanidinoalkyl,
lower alkenyl,
heterocyclic,
15 (heterocyclic)alkyl),
arylthioalkyl,
arylsulfonylalkyl,
(heterocyclic)thioalkyl,
(heterocyclic)sulfonylalkyl,
20 (heterocyclic)oxyalkyl,
arylalkoxyalkyl,
arylthioalkoxyalkyl,
arylalkylsulfonylalkyl,
(heterocyclic))alkoxyalkyl,
25 (heterocyclic)thioalkoxyalkyl,
(heterocyclic)alkylsulfonylalkyl,
cycloalkyloxyalkyl,
cycloalkylthioalkyl,
cycloalkylsulfonylalkyl,
30 cycloalkylalkoxyalkyl,
cycloalkylthioalkoxyalkyl,
cycloalkylalkylsulfonylalkyl,
aminocarbonyl,
alkylaminocarbonyl,

5
dialkylaminocarbonyl,
aroylalkyl,
(heterocyclic)carbonylalkyl,
polyhydroxyalkyl,
aminocarbonylalkyl,
alkylaminocarbonylalkyl,
dialkylaminocarbonylalkyl,
aryloxyalkyl, or
alkylsulfonylalkyl,

10
wherein heterocyclic is pyridyl, thiazolyl, isothiazolyl,
oxazolyl, isoxazolyl, furanyl, thienyl, tetrahydrofuranyl, tetrahydrothienyl and
tetrahydro[2H]pyranyl and wherein the heterocycle is unsubstituted or substituted with
one to three substituents independently selected from hydroxy, halo, amino, alkylamino,
dialkylamino, alkoxy, polyalkoxy, haloalkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl,
15 COOH, -SO₃H, lower alkenyl or lower alkyl;

wherein R₇ is:

20
C₁ - C₃ alkyl,
phenyl,
thioalkoxyalkyl,
(aryl)alkyl,
cycloalkyl,
cycloalkylalkyl,
hydroxyalkyl,
alkoxyalkyl,
25 aryloxyalkyl,
haloalkyl,
carboxyalkyl,
alkoxycarbonylalkyl,
aminoalkyl,
30 (N-protected)aminocalkyl,
alkylaminoalkyl,
((N-protected)(alkyl)amino)alkyl,
dialkylaminoalkyl,
guanidinoalkyl,

lower alkenyl,
heterocyclic,
(heterocyclic)alkyl),
arylthioalkyl,
5 arylsulfonylalkyl,
(heterocyclic)thioalkyl,
(heterocyclic)sulfonylalkyl,
(heterocyclic)oxyalkyl,
arylalkoxyalkyl,
10 arylthioalkoxyalkyl,
arylalkylsulfonylalkyl,
(heterocyclic))alkoxyalkyl,
(heterocyclic)thioalkoxyalkyl,
(heterocyclic)alkylsulfonylalkyl,
15 cycloalkyloxyalkyl,
cycloalkylthioalkyl,
cycloalkylsulfonylalkyl,
cycloalkylalkoxyalkyl,
cycloalkylthioalkoxyalkyl,
20 cycloalkylalkylsulfonylalkyl,
aminocarbonyl,
alkylaminocarbonyl,
dialkylaminocarbonyl,
aroalkyl,
25 (heterocyclic)carbonylalkyl,
polyhydroxyalkyl,
aminocarbonylalkyl,
alkylaminocarbonylalkyl,
dialkylaminocarbonylalkyl,
30 aryloxyalkyl, or
alkylsulfonylalkyl,

wherein heterocyclic is pyridyl, thiazolyl, isothiazolyl,
oxazolyl, isoxazolyl, furanyl, thienyl, tetrahydrofuranyl, tetrahydrothienyl and
tetrahydro[2H]pyranyl and wherein the heterocycle is unsubstituted or substituted with

one to three substituents independently selected from hydroxy, halo, amino, alkylamino, dialkylamino, alkoxy, polyalkoxy, haloalkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, COOH, -SO₃H, lower alkenyl or lower alkyl.

5 52 A compound according to claim 51 where R₁ is:

-(CH₂)₀₋₁-(R₁-aryl), or

-(CH₂)_{n1}-(R₁-heteroaryl);

where R_A is:

-C₁-C₈ alkyl,

10 -(CH₂)₀₋₃-(C₃-C₇) cycloalkyl,

-(CR_{A-x}R_{A-y})₀₋₄-R_A-aryl,

-(CR_{A-x}R_{A-y})₀₋₄-R_A-heteroaryl,

-(CR_{A-x}R_{A-y})₀₋₄-R_A-heterocycle,

-cyclopentyl or -cyclohexyl ring fused to R_A-aryl or R_A-heteroaryl or R_A-

15 heterocycle.

53. A protected compound according to claim 51

where R₁ is:

-(CH₂)-(R₁-aryl), or

20 -(CH₂)-(R₁-heteroaryl);

where R₂ is -H;

where R₃ is -H;

where R_A is:

-C₁-C₈ alkyl,

25 -(CH₂)₀₋₃-(C₃-C₇) cycloalkyl,

-(CR_{A-x}R_{A-y})₀₋₄-R_A-aryl,

-(CR_{A-x}R_{A-y})₀₋₄-R_A-heteroaryl,

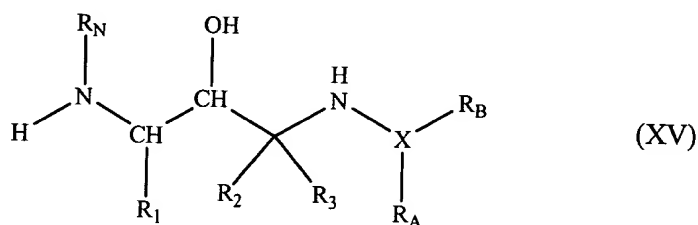
-(CR_{A-x}R_{A-y})₀₋₄-R_A-heterocycle,

-cyclopentyl or -cyclohexyl ring fused to R_A-aryl or R_A-heteroaryl or R_A-

30 heterocycle.

54. A method of treating a patient who has, or in preventing a patient from getting, a disease or condition selected from the group consisting of Alzheimer's disease, for helping prevent or delay the onset of Alzheimer's disease, for treating patients with mild

- cognitive impairment (MCI) and preventing or delaying the onset of Alzheimer's disease in those who would progress from MCI to AD, for treating Down's syndrome, for treating humans who have Hereditary Cerebral Hemorrhage with Amyloidosis of the Dutch-Type, for treating cerebral amyloid angiopathy and preventing its potential consequences, i.e.
- 5 single and recurrent lobar hemorrhages, for treating other degenerative dementias, including dementias of mixed vascular and degenerative origin, dementia associated with Parkinson's disease, dementia associated with progressive supranuclear palsy, dementia associated with cortical basal degeneration, diffuse Lewy body type of Alzheimer's disease and who is in need of such treatment which comprises administration of a
- 10 therapeutically effective amount of a compound selected from the group consisting of a substituted amine of formula (XV)



where R_1 is:

- 15 (I) C_1 - C_6 alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1 - C_3 alkyl, C_1 - C_7 alkyl (optionally substituted with C_1 - C_3 alkyl and C_1 - C_3 alkoxy), -F, -Cl, -Br, -I, -OH, -SH, -C \equiv N, -CF $_3$, C_1 - C_3 alkoxy, -NR $_{1-a}$ R $_{1-b}$ where R $_{1-a}$ and R $_{1-b}$ are -H or C_1 - C_6 alkyl, and -OC=O NR $_{1-a}$ R $_{1-b}$ where R $_{1-a}$ and R $_{1-b}$ are as defined above,
- 20 (II) -CH $_2$ -S(O) $_{0-2}$ -(C_1 - C_6 alkyl),
 (III) -CH $_2$ -CH $_2$ -S(O) $_{0-2}$ -(C_1 - C_6 alkyl),
 (IV) C_2 - C_6 alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C \equiv N, -CF $_3$, C_1 - C_3 alkoxy, and -NR $_{1-a}$ R $_{1-b}$ where R $_{1-a}$ and R $_{1-b}$ are -H or C_1 - C_6 alkyl,
- 25 (V) C_2 - C_6 alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C \equiv N, -CF $_3$, C_1 - C_3 alkoxy, and -NR $_{1-a}$ R $_{1-b}$ where R $_{1-a}$ and R $_{1-b}$ are -H or C_1 - C_6 alkyl,
 (VI) -(CH $_2$) $_{n1}$ -(R $_{1-aryl}$) where n_1 is zero or one and where R $_{1-aryl}$ is phenyl, 1-naphthyl, 2-naphthyl and indanyl, indenyl, dihydronaphthalyl, or tetralinyl optionally
- 30 substituted with one, two, three or four of the following substituents on the aryl ring:

(A) C₁-C₆ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, and C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(B) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(C) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(D) -F, Cl, -Br or -I,

(F) -C₁-C₆ alkoxy optionally substituted with one, two or three of -F,

(G) -NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are as defined below,

(H) -OH,

(I) -C≡N,

(J) C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(K) -CO-(C₁-C₄ alkyl),

(L) -SO₂-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(M) -CO-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, or

(N) -SO₂-(C₁-C₄ alkyl),

(VII) -(CH₂)_{n1}-(R_{1-heteroaryl}) where n₁ is as defined above and where R_{1-heteroaryl} is selected from the group consisting of:

pyridinyl,

pyrimidinyl,

quinolinyl,

benzothienyl,

indolyl,

indolinyl,

pyridazinyl,

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pyrazinyl,
isoquinolyl,
quinazolinyl,
quinoxalinyl,
phthalazinyl,
imidazolyl,
isoxazolyl,
pyrazolyl,
oxazolyl,
thiazolyl,
indolizinyl,
indazolyl,
benzothiazolyl,
benzimidazolyl,
benzofuranyl,
furanyl,
thienyl,
pyrrolyl,
oxadiazolyl,
thiadiazolyl,
triazolyl,
tetrazolyl,
oxazolopyridinyl,
imidazopyridinyl,
isothiazolyl,
naphthyridinyl,
cinnolinyl,
carbazolyl,
beta-carbolinyl,
isochromanyl,
chromanyl,
tetrahydroisoquinolinyl,
isoindolinyl,
isobenzotetrahydrofuranyl,

isobenzotetrahydrothienyl,
isobenzothienyl,
benzoxazolyl,
pyridopyridinyl,
5 benzotetrahydrofuranyl,
benzotetrahydrothienyl,
purinyl,
benzodioxolyl,
triazinyl,
10 phenoxazinyl,
phenothiazinyl,
pteridinyl,
benzothiazolyl,
imidazopyridinyl,
15 imidazothiazolyl,
dihydrobenzisoxazinyl,
benzisoxazinyl,
benzoxazinyl,
dihydrobenziso­thiazinyl,
20 benzopyranyl,
benzothiopyranyl,
coumarinyl,
isocoumarinyl,
chromonyl,
25 chromanonyl,
pyridinyl-N-oxide,
tetrahydroquinolinyl
dihydroquinolinyl
dihydroquinolinonyl
30 dihydroisoquinolinonyl
dihydrocoumarinyl
dihydroisocoumarinyl
isoindolinonyl
benzodioxanyl

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benzoxazolinonyl
pyrrolyl N-oxide,
pyrimidinyl N-oxide,
pyridazinyl N-oxide,
pyrazinyl N-oxide,
quinolinyl N-oxide,
indolyl N-oxide,
indolinyl N-oxide,
isoquinolyl N-oxide,
quinazolinyl N-oxide,
quinoxalinyl N-oxide,
phthalazinyl N-oxide,
imidazolyl N-oxide,
isoxazolyl N-oxide,
oxazolyl N-oxide,
thiazolyl N-oxide,
indoliziny N-oxide,
indazolyl N-oxide,
benzothiazolyl N-oxide,
benzimidazolyl N-oxide,
pyrrolyl N-oxide,
oxadiazolyl N-oxide,
thiadiazolyl N-oxide,
triazolyl N-oxide,
tetrazolyl N-oxide,
benzothiopyranyl S-oxide, and
benzothiopyranyl S,S-dioxide,

where the $R_{1\text{-heteroaryl}}$ group is bonded to $-(CH_2)_{n1}-$ by any ring atom of the parent $R_{1\text{-heteroaryl}}$ group substituted by hydrogen such that the new bond to the $R_{1\text{-heteroaryl}}$ group replaces the hydrogen atom and its bond, where heteroaryl is optionally substituted with one, two, three or four of:

(1) C₁-C₆ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(2) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(3) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(4) -F, Cl, -Br or -I,

(6) -C₁-C₆ alkoxy optionally substituted with one, two, or three of -F,

(7) -NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are as defined below,

(8) -OH,

(9) -C≡N,

(10) C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(11) -CO-(C₁-C₄ alkyl),

(12) -SO₂-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(13) -CO-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, or

(14) -SO₂-(C₁-C₄ alkyl), with the proviso that when n₁ is zero R_{1-heteroaryl} is not bonded to the carbon chain by nitrogen; or

(VIII) -(CH₂)_{n1}-(R_{1-heterocycle}) where n₁ is as defined above and R_{1-heterocycle} is selected from the group consisting of:

morpholinyl,

thiomorpholinyl,

thiomorpholinyl S-oxide,

thiomorpholinyl S,S-dioxide,

piperazinyl,
 homopiperazinyl,
 pyrrolidinyl,
 pyrrolinyl,
 5 tetrahydropyranyl,
 piperidinyl,
 tetrahydrofuranyl,
 tetrahydrothienyl,
 homopiperidinyl,
 10 homomorpholinyl,
 homothiomorpholinyl,
 homothiomorpholinyl S,S-dioxide,
 oxazolidinonyl,
 dihydropyrazolyl,
 15 dihydropyrrolyl,
 dihydropyrazinyl,
 dihydropyridinyl,
 dihydropyrimidinyl,
 dihydrofuryl,
 20 dihydropyranyl,
 tetrahydrothienyl S-oxide,
 tetrahydrothienyl S,S-dioxide, and
 homothiomorpholinyl S-oxide,

where the $R_{1\text{-heterocycle}}$ group is bonded by any atom of the parent R_1 .

25 heterocycle group substituted by hydrogen such that the new bond to the $R_{1\text{-heterocycle}}$ group
 replaces the hydrogen atom and its bond, where heterocycle is optionally substituted with
 one, two, three or four:

(1) C_1 - C_6 alkyl optionally substituted with one, two or three
 substituents selected from the group consisting of C_1 - C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH,
 30 - $C\equiv N$, - CF_3 , C_1 - C_3 alkoxy, and - $NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(2) C_2 - C_6 alkenyl with one or two double bonds, optionally
 substituted with one, two or three substituents selected from the group consisting of -F, -

Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(3) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(4) -F, Cl, -Br or -I,

(5) C₁-C₆ alkoxy,

(6) -C₁-C₆ alkoxy optionally substituted with one, two, or three -F,

(7) -NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are as defined below,

(8) -OH,

(9) -C≡N,

(10) C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(11) -CO-(C₁-C₄ alkyl),

(12) -SO₂-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(13) -CO-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(14) -SO₂-(C₁-C₄ alkyl), or

(15) =O, with the proviso that when n₁ is zero R_{1-heterocycle} is not bonded to the carbon chain by nitrogen;

where R₂ is:

(I)-H,

(II) C₁-C₆ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(III) -(CH₂)₀₋₄-R₂₋₁ where R₂₋₁ is R_{1-aryl} or R_{1-heteroaryl} where R_{1-aryl} and R_{1-heteroaryl} are as defined above;

(IV) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(V) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl, or

(VI) -(CH₂)₀₋₄- C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl;

where R₃ is:

(I)-H,

(II) C₁-C₆ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH,

-SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(III) -(CH₂)₀₋₄-R₂₋₁ where R₂₋₁ is R_{1-aryl} or R_{1-heteroaryl} where R_{1-aryl} and R_{1-heteroaryl} are as defined above

(IV) C₂-C₆ alkenyl with one or two double bonds,

(V) C₂-C₆ alkynyl with one or two triple bonds; or

(VI) -(CH₂)₀₋₄- C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

and where R₂ and R₃ are taken together with the carbon to which they are attached to form a carbocycle of three, four, five, six, or seven carbon atoms, optionally where one carbon atom is replaced by a heteroatom selected from the group consisting of -O-, -S-, -SO₂-, and -NR_{N-2}-, where R_{N-2} is selected from the group consisting of:

(a) -H,

(b) -C₁-C₆ alkyl optionally substituted with one substituent selected from the group consisting of:

(i) -OH, and

(ii) -NH₂,

(c) -C₁-C₆ alkyl optionally substituted with one, two, or three -F, -Cl, -Br, or -I,

- 5
- (d) -C₃-C₇ cycloalkyl,
 (e) -(C₁-C₂ alkyl)-(C₃-C₇ cycloalkyl),
 (f) -(C₁-C₆ alkyl)-O-(C₁-C₃ alkyl),
 (g) -C₂-C₆ alkenyl with one or two double bonds,
 (h) -C₂-C₆ alkynyl with one or two triple bonds,
 (i) -C₁-C₆ alkyl chain with one double bond and one
 triple bond,
- 10
- (j) -R_{1-aryl} where R_{1-aryl} is as defined above, and
 (k) -R_{1-heteroaryl} where R_{1-heteroaryl} is as defined above;

where R_N is:

- (I) R_{N-1}-X_N- where X_N is selected from the group consisting of:
- 15
- (A) -CO-,
 (B) -SO₂-,
 (C) -(CR'R'')₁₋₆ where R' and R'' are the same or different and are
 -H and C₁-C₄ alkyl,
 (D) -CO-(CR'R'')₁₋₆-X_{N-1} where X_{N-1} is selected from the group
 consisting of -O-, -S- and -NR'- and where R' and R'' are as defined above, and
 (E) a single bond;
- 20
- where R_{N-1} is selected from the group consisting of:
- (A) R_{N-aryl} where R_{N-aryl} is phenyl, 1-naphthyl, 2-naphthyl,
 tetralinyl, indanyl, 6,7,8,9-tetrahydro-5H-benzo[a]cycloheptenyl, or dihydronaphthyl
 optionally substituted with one, two or three of the following substituents which can be
 the same or different and are:
- 25
- (1) C₁-C₆ alkyl, optionally substituted with one, two or
 three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I,
 -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined
 above,
- 30
- (2) -OH,
 (3) -NO₂,
 (4) -F, -Cl, -Br, -I,
 (5) -CO-OH,
 (6) -C≡N,

(7) $-(CH_2)_{0-4}-CO-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are selected from the group consisting of:

- (a) -H,
- (b) $-C_1-C_6$ alkyl optionally substituted with one substituent selected from the group consisting of:
 - (i) -OH, and
 - (ii) $-NH_2$,
- (c) $-C_1-C_6$ alkyl optionally substituted with one, two, or three -F, -Cl, -Br, or -I,
- (d) $-C_3-C_7$ cycloalkyl,
- (e) $-(C_1-C_2 \text{ alkyl})-(C_3-C_7 \text{ cycloalkyl})$,
- (f) $-(C_1-C_6 \text{ alkyl})-O-(C_1-C_3 \text{ alkyl})$,
- (g) $-C_2-C_6$ alkenyl with one or two double bonds,
- (h) $-C_2-C_6$ alkynyl with one or two triple bonds,
- (i) $-C_1-C_6$ alkyl chain with one double bond and one triple bond,
- (j) $-R_{1-aryl}$ where R_{1-aryl} is as defined above, and
- (k) $-R_{1-heteroaryl}$ where $R_{1-heteroaryl}$ is as defined above,
- (8) $-(CH_2)_{0-4}-CO-(C_1-C_{12} \text{ alkyl})$,
- (9) $-(CH_2)_{0-4}-CO-(C_2-C_{12} \text{ alkenyl with one, two or three double bonds})$,
- (10) $-(CH_2)_{0-4}-CO-(C_2-C_{12} \text{ alkynyl with one, two or three triple bonds})$,
- (11) $-(CH_2)_{0-4}-CO-(C_3-C_7 \text{ cycloalkyl})$,
- (12) $-(CH_2)_{0-4}-CO-R_{1-aryl}$ where R_{1-aryl} is as defined above,
- (13) $-(CH_2)_{0-4}-CO-R_{1-heteroaryl}$ where $R_{1-heteroaryl}$ is as defined above,
- (14) $-(CH_2)_{0-4}-CO-R_{1-heterocycle}$ where $R_{1-heterocycle}$ is as defined above,
- (15) $-(CH_2)_{0-4}-CO-R_{N-4}$ where R_{N-4} is selected from the group consisting of morpholinyl, thiomorpholinyl, piperazinyl, piperidinyl, homomorpholinyl, homothiomorpholinyl, homothiomorpholinyl S-oxide, homothiomorpholinyl S,S-dioxide, pyrrolinyl and pyrrolidinyl where each group is optionally substituted with one, two, three, or four of C_1-C_6 alkyl,

(16) $-(CH_2)_{0-4}-CO-O-R_{N-5}$ where R_{N-5} is selected from the group consisting of:

- 5 above,
- (a) C_1-C_6 alkyl,
- (b) $-(CH_2)_{0-2}-(R_{1-aryl})$ where R_{1-aryl} is as defined
- (c) C_2-C_6 alkenyl containing one or two double
- bonds,
- (d) C_2-C_6 alkynyl containing one or two triple
- bonds,
- 10 (e) C_3-C_7 cycloalkyl, and
- (f) $-(CH_2)_{0-2}-(R_{1-heteroaryl})$ where $R_{1-heteroaryl}$ is as
- defined above,
- (17) $-(CH_2)_{0-4}-SO_2-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are as
- defined above,
- 15 (18) $-(CH_2)_{0-4}-SO-(C_1-C_8 \text{ alkyl})$,
- (19) $-(CH_2)_{0-4}-SO_2-(C_1-C_{12} \text{ alkyl})$,
- (20) $-(CH_2)_{0-4}-SO_2-(C_3-C_7 \text{ cycloalkyl})$,
- (21) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-O-R_{N-5}$ where R_{N-5} can be
- the same or different and is as defined above,
- 20 (22) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-N(R_{N-5})_2$, where R_{N-5} can
- be the same or different and is as defined above,
- (23) $-(CH_2)_{0-4}-N-CS-N(R_{N-5})_2$, where R_{N-5} can be the same
- or different and is as defined above,
- (24) $-(CH_2)_{0-4}-N(-H \text{ or } R_{N-5})-CO-R_{N-2}$ where R_{N-5} and R_{N-2}
- 25 can be the same or different and are as defined above,
- (25) $-(CH_2)_{0-4}-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} can be the
- same or different and are as defined above,
- (26) $-(CH_2)_{0-4}-R_{N-4}$ where R_{N-4} is as defined above,
- (27) $-(CH_2)_{0-4}-O-CO-(C_1-C_6 \text{ alkyl})$,
- 30 (28) $-(CH_2)_{0-4}-O-P(O)-(OR_{N-aryl-1})_2$ where $R_{N-aryl-1}$ is $-H$ or
- C_1-C_4 alkyl,
- (29) $-(CH_2)_{0-4}-O-CO-N(R_{N-5})_2$ where R_{N-5} is as defined
- above,

above,
(30) $-(CH_2)_{0-4}-O-CS-N(R_{N-5})_2$ where R_{N-5} is as defined

above,
(31) $-(CH_2)_{0-4}-O-(R_{N-5})_2$ where R_{N-5} is as defined above,
(32) $-(CH_2)_{0-4}-O-(R_{N-5})_2-COOH$ where R_{N-5} is as defined
5 above,

(33) $-(CH_2)_{0-4}-S-(R_{N-5})_2$ where R_{N-5} is as defined above,
(34) $-(CH_2)_{0-4}-O-(C_1-C_6 \text{ alkyl optionally substituted with one, two, three, four, or five of } -F),$

(35) C_3-C_7 cycloalkyl,
10 (36) C_2-C_6 alkenyl with one or two double bonds optionally substituted with C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, or $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(37) C_2-C_6 alkynyl with one or two triple bonds optionally substituted with C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, or $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,
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(38) $-(CH_2)_{0-4}-N(-H \text{ or } R_{N-5})-SO_2-R_{N-2}$ where R_{N-5} and R_{N-2} can be the same or different and are as described above, or

(39) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl,
(B) $-R_{N-heteroaryl}$ where $R_{N-heteroaryl}$ is selected from the group
20 consisting of:

pyridinyl,
pyrimidinyl,
quinolinyl,
benzothienyl,
25 indolyl,
indolinyl,
pyridazinyl,
pyrazinyl,
isoindolyl,
30 isoquinolyl,
quinazolinyl,
quinoxalinyl,
phthalazinyl,

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imidazolyl,
isoxazolyl,
pyrazolyl,
oxazolyl,
thiazolyl,
indolizinyI,
indazolyl,
benzothiazolyl,
benzimidazolyl,
benzofuranyl,
furanyl,
thienyl,
pyrrolyl,
oxadiazolyl,
thiadiazolyl,
triazolyl,
tetrazolyl,
oxazolopyridinyl,
imidazopyridinyl,
isothiazolyl,
naphthyridinyl,
cinnolinyl,
carbazolyl,
beta-carbolinyl,
isochromanyl,
chromanyl,
tetrahydroisoquinolinyl,
isoindolinyl,
isobenzotetrahydrofuranyl,
isobenzotetrahydrothienyl,
isobenzothieryl,
benzoxazolyl,
pyridopyridinyl,
benzotetrahydrofuranyl,

5 benzotetrahydrothienyl,
purinyl,
benzodioxolyl,
triazinyl,
phenoxazinyl,
phenothiazinyl,
pteridinyll,
benzothiazolyl,
10 imidazopyridinyl,
imidazothiazolyl,
dihydrobenzisoaxazinyl,
benzisoaxazinyl,
benzoxazinyl,
15 dihydrobenzisothiazinyl,
benzopyranyl,
benzothiopyranyl,
coumarinyl,
isocoumarinyl,
20 chromonyl,
chromanonyl,
pyridinyl-N-oxide,
tetrahydroquinolinyl,
dihydroquinolinyl,
dihydroquinolinonyl,
25 dihydroisoquinolinonyl,
dihydrocoumarinyl,
dihydroisocoumarinyl,
isoindolinonyl,
benzodioxanyl,
30 benzoxazolinonyl,
pyrrolyl N-oxide,
pyrimidinyl N-oxide,
pyridazinyl N-oxide,
pyrazinyl N-oxide,

5 quinoliny N-oxide,
 indolyl N-oxide,
 indoliny N-oxide,
 isoquinolyl N-oxide,
 quinazoliny N-oxide,
 quinoxaliny N-oxide,
 phthalaziny N-oxide,
 imidazolyl N-oxide,
 10 isoxazolyl N-oxide,
 oxazolyl N-oxide,
 thiazolyl N-oxide,
 indoliziny N-oxide,
 indazolyl N-oxide,
 15 benzothiazolyl N-oxide,
 benzimidazolyl N-oxide,
 pyrrolyl N-oxide,
 oxadiazolyl N-oxide,
 thiadiazolyl N-oxide,
 triazolyl N-oxide,
 20 tetrazolyl N-oxide,
 benzothiopyranyl S-oxide, and
 benzothiopyranyl S,S-dioxide

where the $R_{N\text{-heteroaryl}}$ group is bonded by any atom of the parent R_N -heteroaryl group substituted by hydrogen such that the new bond to the $R_{N\text{-heteroaryl}}$ group
 25 replaces the hydrogen atom and its bond, where heteroaryl is optionally substituted with one, two, three, or four of:

(1) C_1 - C_6 alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1 - C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C \equiv N, -CF $_3$, C_1 - C_3 alkoxy, and -NR $_{1-a}$ R $_{1-b}$ where R $_{1-a}$ and R $_{1-b}$ are as defined
 30 above,

(2) -OH,

(3) -NO $_2$,

(4) -F, -Cl, -Br, or -I,

(5) -CO-OH,

(6) -C≡N,

(7) $-(CH_2)_{0-4}-CO-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are selected from the group consisting of:

5 (a) -H,

(b) -C₁-C₆ alkyl optionally substituted with one substituent selected from the group consisting of:

(i) -OH, and

(ii) -NH₂,

10 (c) -C₁-C₆ alkyl optionally substituted with one, two, or three -F, -Cl, -Br, -I,

(d) -C₃-C₇ cycloalkyl,

(e) -(C₁-C₂ alkyl)-(C₃-C₇ cycloalkyl),

(f) -(C₁-C₆ alkyl)-O-(C₁-C₃ alkyl),

15 (g) -C₂-C₆ alkenyl with one or two double bonds,

(h) -C₂-C₆ alkynyl with one or two triple bonds,

(i) -C₁-C₆ alkyl chain with one double bond and one triple bond,

(j) -R_{1-aryl} where R_{1-aryl} is as defined above,

20 (k) -R_{1-heteroaryl} where R_{1-heteroaryl} is as defined above,

(8) $-(CH_2)_{0-4}-CO-(C_1-C_{12} \text{ alkyl})$,

(9) $-(CH_2)_{0-4}-CO-(C_2-C_{12} \text{ alkenyl with one, two or three double bonds})$,

25 (10) $-(CH_2)_{0-4}-CO-(C_2-C_{12} \text{ alkynyl with one, two or three triple bonds})$,

(11) $-(CH_2)_{0-4}-CO-(C_3-C_7 \text{ cycloalkyl})$,

(12) $-(CH_2)_{0-4}-CO-R_{1-aryl}$ where R_{1-aryl} is as defined above,

(13) $-(CH_2)_{0-4}-CO-R_{1-heteroaryl}$ where R_{1-heteroaryl} is as defined above,

30 (14) $-(CH_2)_{0-4}-CO-R_{1-heterocycle}$ where R_{1-heterocycle} is as defined above,

(15) $-(CH_2)_{0-4}-CO-R_{N-4}$ where R_{N-4} is selected from the group consisting of morpholinyl, thiomorpholinyl, piperazinyl, piperidinyl,

homomorpholiny, homothiomorpholiny, homothiomorpholiny S-oxide,
homothiomorpholiny S,S-dioxide, pyrroliny and pyrrolidiny where each group is
optionally substituted with one, two, three, or four of C₁-C₆ alkyl,

(16) $-(CH_2)_{0-4}-CO-O-R_{N-5}$ where R_{N-5} is selected from the
5 group consisting of:

(a) C₁-C₆ alkyl,

(b) $-(CH_2)_{0-2}-(R_{1-aryl})$ where R_{1-aryl} is as defined

above,

(c) C₂-C₆ alkenyl containing one or two double

10 bonds,

(d) C₂-C₆ alkynyl containing one or two triple

bonds,

(e) C₃-C₇ cycloalkyl, and

(f) $-(CH_2)_{0-2}-(R_{1-heteroaryl})$ where R_{1-heteroaryl} is as

15 defined above,

(17) $-(CH_2)_{0-4}-SO_2-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are as

defined above,

(18) $-(CH_2)_{0-4}-SO-(C_1-C_8 \text{ alkyl})$,

(19) $-(CH_2)_{0-4}-SO_2-(C_1-C_{12} \text{ alkyl})$,

20

(20) $-(CH_2)_{0-4}-SO_2-(C_3-C_7 \text{ cycloalkyl})$,

(21) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-O-R_{N-5}$ where R_{N-5} can be
the same or different and is as defined above,

(22) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-N(R_{N-5})_2$, where R_{N-5} can
be the same or different and is as defined above,

25

(23) $-(CH_2)_{0-4}-N-CS-N(R_{N-5})_2$, where R_{N-5} can be the same
or different and is as defined above,

(24) $-(CH_2)_{0-4}-N(-H \text{ or } R_{N-5})-CO-R_{N-2}$ where R_{N-5} and R_{N-2}
can be the same or different and are as defined above,

(25) $-(CH_2)_{0-4}-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} can be the
30 same or different and are as defined above,

(26) $-(CH_2)_{0-4}-R_{N-4}$ where R_{N-4} is as defined above,

(27) $-(CH_2)_{0-4}-O-CO-(C_1-C_6 \text{ alkyl})$,

(28) $-(CH_2)_{0-4}-O-P(O)-(OR_{N-aryl-1})_2$ where R_{N-aryl-1} is -H or
C₁-C₄ alkyl,

(29) $-(CH_2)_{0-4}-O-CO-N(R_{N-5})_2$ where R_{N-5} is as defined above,

(30) $-(CH_2)_{0-4}-O-CS-N(R_{N-5})_2$ where R_{N-5} is as defined above,

5 (31) $-(CH_2)_{0-4}-O-(R_{N-5})_2$ where R_{N-5} is as defined above,

(32) $-(CH_2)_{0-4}-O-(R_{N-5})_2-COOH$ where R_{N-5} is as defined above,

(33) $-(CH_2)_{0-4}-S-(R_{N-5})_2$ where R_{N-5} is as defined above,

10 (34) $-(CH_2)_{0-4}-O-(C_1-C_6 \text{ alkyl optionally substituted with one, two, three, four, or five of } -F),$

(35) C_3-C_7 cycloalkyl,

(36) C_2-C_6 alkenyl with one or two double bonds optionally substituted with C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, or $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

15 (37) C_2-C_6 alkynyl with one or two triple bonds optionally substituted with C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, or $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(38) $-(CH_2)_{0-4}-N(-H \text{ or } R_{N-5})-SO_2-R_{N-2}$ where R_{N-5} and R_{N-2} can be the same or different and are as defined above, or

20 (39) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl,

(C) $R_{N-aryl}-W-R_{N-aryl}$, where R_{N-aryl} can be the same or different,

(D) $R_{N-aryl}-W-R_{N-heteroaryl}$,

(E) $R_{N-aryl}-W-R_{N-1-heterocycle}$, wherein $R_{N-1-heterocycle}$ is the same as $R_{1-heterocycle}$, and $R_{1-heterocycle}$ is as defined above

25 (F) $R_{N-heteroaryl}-W-R_{N-aryl}$,

(G) $R_{N-heteroaryl}-W-R_{N-heteroaryl}$,

(H) $R_{N-heteroaryl}-W-R_{N-1-heterocycle}$,

(I) $R_{N-heterocycle}-W-R_{N-aryl}$, wherein $R_{N-heterocycle}$ is the same as $R_{1-heterocycle}$, and $R_{1-heterocycle}$ is as defined above, and R_{N-aryl} is as defined above,

30 (J) $R_{N-heterocycle}-W-R_{N-heteroaryl}$, and

(K) $R_{N-heterocycle}-W-R_{N-1-heterocycle}$,

where W is

(25) $-(CH_2)_{0-4}-$,

(26) $-O-$,

(27) $-S(O)_{0-2}-$,

(28) $-N(R_{N-5})-$ where R_{N-5} is as defined above, or

(5) $-CO-$;

5 (II) $-CO-(C_1-C_{10} \text{ alkyl})$ where alkyl is optionally substituted with one three substituents selected from the group consisting of:

(A) $-OH$,

(B) $-C_1-C_6 \text{ alkoxy}$,

(C) $-C_1-C_6 \text{ thioalkoxy}$,

10 (D) $-CO-O-R_{N-8}$ where R_{N-8} is $-H$, $C_1-C_6 \text{ alkyl}$ or $-phenyl$,

(E) $-CO-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(F) $-CO-R_{N-4}$ where R_{N-4} is as defined above,

(G) $-SO_2-(C_1-C_8 \text{ alkyl})$,

15 (H) $-SO_2-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(I) $-NH-CO-(C_1-C_6 \text{ alkyl})$,

(J) $-NH-CO-O-R_{N-8}$ where R_{N-8} is as defined above,

20 (K) $-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(L) $-R_{N-4}$ where R_{N-4} is as defined above,

(M) $-O-CO-(C_1-C_6 \text{ alkyl})$,

(N) $-O-CO-NR_{N-8}R_{N-8}$ where R_{N-8} are the same or different and are as defined above,

25 (O) $-O-(C_1-C_5 \text{ alkyl})-COOH$,

(P) $-O-(C_1-C_6 \text{ alkyl})$ optionally substituted with one, two, or three of $-F$, $-Cl$, $-Br$, or $-I$,

(Q) $-NH-SO_2-(C_1-C_6 \text{ alkyl})$, and

(R) $-F$, or $-Cl$,

30 (III) $-CO-(C_1-C_6 \text{ alkyl})-O-(C_1-C_6 \text{ alkyl})$ where alkyl is optionally substituted with one, two, or three substituents selected from the group consisting of:

(A) $-OH$,

- (B) -C₁-C₆ alkoxy,
 (C) -C₁-C₆ thioalkoxy,
 (D) -CO-O-R_{N-8} where R_{N-8} is -H, C₁-C₆ alkyl or -phenyl,
 (E) -CO-NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are the same or different
 5 and are as defined above,
 (F) -CO-R_{N-4} where R_{N-4} is as defined above,
 (G) -SO₂-(C₁-C₈ alkyl),
 (H) -SO₂-NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are the same or different
 and are as defined above,
 10 (I) -NH-CO-(C₁-C₆ alkyl),
 (J) -NH-CO-O-R_{N-8} where R_{N-8} is as defined above,
 (K) -NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are the same or different and
 are as defined above,
 (L) -R_{N-4} where R_{N-4} is as defined above,
 15 (M) -O-CO-(C₁-C₆ alkyl),
 (N) -O-CO-NR_{N-8}R_{N-8} where R_{N-8} are the same or different and are
 as defined above,
 (O) -O-(C₁-C₅ alkyl)-COOH,
 (P) -O-(C₁-C₆ alkyl) optionally substituted with one, two, or three of
 20 -F, -Cl, -Br, or -I),
 (Q) -NH-SO₂-(C₁-C₆ alkyl), and
 (R) -F, or -Cl,
 (IV) -CO-(C₁-C₆ alkyl)-S-(C₁-C₆ alkyl) where alkyl is optionally
 substituted with one, two, or three of substituents selected from the group consisting of:
 25 (A) -OH,
 (B) -C₁-C₆ alkoxy,
 (C) -C₁-C₆ thioalkoxy,
 (D) -CO-O-R_{N-8} where R_{N-8} is as defined above,
 (E) -CO-NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are the same or different
 30 and are as defined above,
 (F) -CO-R_{N-4} where R_{N-4} is as defined above,
 (G) -SO₂-(C₁-C₈ alkyl),

(H) $-\text{SO}_2-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(I) $-\text{NH}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

(J) $-\text{NH}-\text{CO}-\text{O}-\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is as defined above,

5 (K) $-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(L) $-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(M) $-\text{O}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

(N) $-\text{O}-\text{CO}-\text{NR}_{\text{N-8}}\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ are the same or different and are
10 as defined above,

(O) $-\text{O}-(\text{C}_1-\text{C}_5 \text{ alkyl})-\text{COOH}$,

(P) $-\text{O}-(\text{C}_1-\text{C}_6 \text{ alkyl})$ optionally substituted with one, two, or three of
-F, -Cl, -Br, or -I),

(Q) $-\text{NH}-\text{SO}_2-(\text{C}_1-\text{C}_6 \text{ alkyl})$, and

15 (R) -F, or -Cl,

(V) $-\text{CO}-\text{CH}(-(\text{CH}_2)_{0-2}-\text{O}-\text{R}_{\text{N-10}})-(\text{CH}_2)_{0-2}-\text{R}_{\text{N-aryl}}/\text{R}_{\text{N-heteroaryl}}$ where $\text{R}_{\text{N-aryl}}$
and $\text{R}_{\text{N-heteroaryl}}$ are as defined above, where $\text{R}_{\text{N-10}}$ is selected from the group consisting of:

(A) -H,

(B) $\text{C}_1-\text{C}_6 \text{ alkyl}$,

20 (C) $\text{C}_3-\text{C}_7 \text{ cycloalkyl}$,

(D) $\text{C}_2-\text{C}_6 \text{ alkenyl}$ with one double bond,

(E) $\text{C}_2-\text{C}_6 \text{ alkynyl}$ with one triple bond,

(F) $\text{R}_{\text{I-aryl}}$ where $\text{R}_{\text{I-aryl}}$ is as defined above, and

(G) $\text{R}_{\text{N-heteroaryl}}$ where $\text{R}_{\text{N-heteroaryl}}$ is as defined above, or

25 (VI) $-\text{CO}-(\text{C}_3-\text{C}_8 \text{ cycloalkyl})$ where alkyl is optionally substituted with one or two substituents selected from the group consisting of:

(A) $-(\text{CH}_2)_{0-4}-\text{OH}$,

(B) $-(\text{CH}_2)_{0-4}-\text{C}_1-\text{C}_6 \text{ alkoxy}$,

(C) $-(\text{CH}_2)_{0-4}-\text{C}_1-\text{C}_6 \text{ thioalkoxy}$,

30 (D) $-(\text{CH}_2)_{0-4}-\text{CO}-\text{O}-\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is -H, $\text{C}_1-\text{C}_6 \text{ alkyl}$ or phenyl,

(E) $-(\text{CH}_2)_{0-4}-\text{CO}-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(F) $-(\text{CH}_2)_{0-4}-\text{CO}-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(G) $-(\text{CH}_2)_{0-4}-\text{SO}_2-(\text{C}_1-\text{C}_8 \text{ alkyl})$,

(H) $-(\text{CH}_2)_{0-4}-\text{SO}_2-\text{NR}_{\text{N}-2}\text{R}_{\text{N}-3}$ where $\text{R}_{\text{N}-2}$ and $\text{R}_{\text{N}-3}$ are the same or different and are as defined above,

(I) $-(\text{CH}_2)_{0-4}-\text{NH}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

5 (J) $-\text{NH}-\text{CO}-\text{O}-\text{R}_{\text{N}-8}$ where $\text{R}_{\text{N}-8}$ is as defined above,

(K) $-(\text{CH}_2)_{0-4}-\text{NR}_{\text{N}-2}\text{R}_{\text{N}-3}$ where $\text{R}_{\text{N}-2}$ and $\text{R}_{\text{N}-3}$ are the same or different and are as defined above,

(L) $-(\text{CH}_2)_{0-4}-\text{R}_{\text{N}-4}$ where $\text{R}_{\text{N}-4}$ is as defined above,

(M) $-\text{O}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

10 (N) $-\text{O}-\text{CO}-\text{NR}_{\text{N}-8}\text{R}_{\text{N}-8}$ where $\text{R}_{\text{N}-8}$ are the same or different and are as defined above,

(O) $-\text{O}-(\text{C}_1-\text{C}_5 \text{ alkyl})-\text{COOH}$,

(P) $-\text{O}-(\text{C}_1-\text{C}_6 \text{ alkyl})$ optionally substituted with one, two, or three of $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, or $-\text{I}$,

15 (Q) $-\text{NH}-\text{SO}_2-(\text{C}_1-\text{C}_6 \text{ alkyl})$, and

(R) $-\text{F}$, or $-\text{Cl}$;

where R_A is:

(I) C_1-C_{10} alkyl optionally substituted with one, two or three substituents
 20 selected from the group consisting of C_1-C_3 alkyl, $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$, $-\text{OH}$,
 $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_6 alkoxy, $-\text{O}-\text{phenyl}$, $-\text{NR}_{1-\text{a}}\text{R}_{1-\text{b}}$ where $\text{R}_{1-\text{a}}$ and $\text{R}_{1-\text{b}}$ are as defined
 above, $-\text{OC}=\text{O NR}_{1-\text{a}}\text{R}_{1-\text{b}}$ where $\text{R}_{1-\text{a}}$ and $\text{R}_{1-\text{b}}$ are as defined above, $-\text{S}(=\text{O})_{0-2} \text{R}_{1-\text{a}}$ where
 $\text{R}_{1-\text{a}}$ is as defined above, $-\text{NR}_{1-\text{a}}\text{C}=\text{O NR}_{1-\text{a}}\text{R}_{1-\text{b}}$ where $\text{R}_{1-\text{a}}$ and $\text{R}_{1-\text{b}}$ are as defined above, $-\text{C}=\text{O NR}_{1-\text{a}}\text{R}_{1-\text{b}}$ where $\text{R}_{1-\text{a}}$ and $\text{R}_{1-\text{b}}$ are as defined above, and $-\text{S}(=\text{O})_2 \text{NR}_{1-\text{a}}\text{R}_{1-\text{b}}$ where $\text{R}_{1-\text{a}}$
 25 a and $\text{R}_{1-\text{b}}$ are as defined above,

(II) $-(\text{CH}_2)_{0-3}-(\text{C}_3-\text{C}_8)$ cycloalkyl where cycloalkyl can be optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_6 alkoxy, $-\text{O}-\text{phenyl}$, $-\text{CO}-\text{OH}$, $-\text{CO}-\text{O}-(\text{C}_1-\text{C}_4 \text{ alkyl})$, and $-\text{NR}_{1-\text{a}}\text{R}_{1-\text{b}}$ where $\text{R}_{1-\text{a}}$ and $\text{R}_{1-\text{b}}$ are as defined above,

30 (III) $-(\text{CR}_{\text{A}-\text{x}}\text{R}_{\text{A}-\text{y}})_{0-4}-\text{R}_{\text{A}-\text{aryl}}$ where $\text{R}_{\text{A}-\text{x}}$ and $\text{R}_{\text{A}-\text{y}}$ are

(A) $-\text{H}$,

(B) C_1-C_4 alkyl optionally substituted with one or two $-\text{OH}$,

(C) C₁-C₄ alkoxy optionally substituted with one, two, or three of - F,

(D) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl,

(E) C₂-C₆ alkenyl containing one or two double bonds,

5 (F) C₂-C₆ alkynyl containing one or two triple bonds, or

(G) phenyl,

and where R_{A-x} and R_{A-y} are taken together with the carbon to which they are attached to form a carbocycle of three, four, five, six or seven carbon atoms, optionally where one carbon atom is replaced by a heteroatom selected from the group
10 consisting of -O-, -S-, -SO₂-, and -NR_{N-2}- and R_{A-aryl} is the same as R_{N-aryl},

(IV) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-heteroaryl} where R_{A-heteroaryl} is the same as R_{N-heteroaryl} and R_{A-x} and R_{A-y} are as defined above,

(V) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-aryl}-R_{A-aryl} where R_{A-aryl}, R_{A-x} and R_{A-y} are as defined above,

15 (VI) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-aryl}-R_{A-heteroaryl} where R_{A-aryl}, R_{A-heteroaryl}, R_{A-x} and R_{A-y} are as defined above,

(VII) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-heteroaryl}-R_{A-aryl} where R_{A-heteroaryl}, R_{A-aryl}, R_{A-x} and R_{A-y} are as defined above,

(VIII) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-heteroaryl}-R_{A-heteroaryl} where R_{A-heteroaryl}, R_{A-x} and R_{A-y} are as defined above,
20

(IX) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-aryl}-R_{A-heterocycle} where R_{A-heterocycle} is defined as R_{1-heterocycle}, and where R_{A-aryl}, R_{A-x} and R_{A-y} are as defined above,

(X) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-heteroaryl}-R_{A-heterocycle} where R_{A-heteroaryl}, R_{A-heterocycle}, R_{A-x} and R_{A-y} are as defined above,

25 (XI) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-heterocycle}-R_{A-aryl} where R_{A-heterocycle}, R_{A-aryl}, R_{A-x} and R_{A-y} are as defined above,

(XII) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-heterocycle}-R_{A-heteroaryl} where R_{A-heterocycle}, R_{A-heteroaryl}, R_{A-x} and R_{A-y} are as defined above,

(XIII) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-heterocycle}-R_{A-heterocycle} where R_{A-heterocycle}, R_{A-x} and R_{A-y} are as defined above,
30

(XIV) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-heterocycle} where R_{A-heterocycle}, R_{A-x} and R_{A-y} are as defined above,

(XV) -[C(R_{A-1})(R_{A-2})]₁₋₃-CO-N(R_{A-3})₂ where R_{A-1} and R_{A-2} are the same or different and are selected from the group consisting of:

(A) -H,

(B) -C₁-C₆ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(C) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(D) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(E) -(CH₂)₁₋₂-S(O)₀₋₂-(C₁-C₆ alkyl),

(F) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(G) -(C₁-C₄ alkyl)-R_{A'-aryl} where R_{A'-aryl} is as defined for R_{1-aryl},

(H) -(C₁-C₄ alkyl)-R_{A-heteroaryl} where R_{A-heteroaryl} is as defined above,

(I) -(C₁-C₄ alkyl)-R_{A-heterocycle} where R_{A-heterocycle} is as defined above,

(J) -R_{A-heteroaryl} where R_{A-heteroaryl} is as defined above,

(K) -R_{A-heterocycle} where R_{A-heterocycle} is as defined above,

(M) -(CH₂)₁₋₄-R_{A-4}-(CH₂)₀₋₄-R_{A'-aryl} where R_{A-4} is -O-, -S- or -NR_{A-5}- where R_{A-5} is C₁-C₆ alkyl, and where R_{A'-aryl} is defined above,

(N) -(CH₂)₁₋₄-R_{A-4}-(CH₂)₀₋₄-R_{A-heteroaryl} where R_{A-4} and R_{A-heteroaryl} are as defined above, and

(O) -R_{A'-aryl} where R_{A'-aryl} is as defined above,

and where R_{A-3} is the same or different and is:

(A) -H,

(B) -C₁-C₆ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH,

-SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(C) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(D) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(E) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(F) -R_{A'-aryl} where R_{A'-aryl} is as defined above,

(G) -R_{A-heteroaryl} where R_{A-heteroaryl} is as defined above,

(H) -R_{A-heterocycle} where R_{A-heterocycle} is as defined above,

(I) -(C₁-C₄ alkyl)-R_{A'-aryl} where R_{A'-aryl} is as defined above,

(J) -(C₁-C₄ alkyl)-R_{A-heteroaryl} where R_{A-heteroaryl} is as defined above,

(K) -(C₁-C₄ alkyl)-R_{A-heterocycle} where R_{A-heterocycle} is as defined above, or

(XVI) -CH(R_{A-aryl})₂ where R_{A-aryl} are the same or different and are as defined above,

(XVII) -CH(R_{A-heteroaryl})₂ where R_{A-heteroaryl} are the same or different and are as defined above,

(XVIII) -CH(R_{A-aryl})(R_{A-heteroaryl}) where R_{A-aryl} and R_{A-heteroaryl} are as defined above,

(XIX) -cyclopentyl, -cyclohexyl, or -cycloheptyl ring fused to R_{A-aryl}, R_{A-heteroaryl}, R_{A-heterocycle} where R_{A-aryl} or R_{A-heteroaryl} or R_{A-heterocycle} are as defined above where one carbon of cyclopentyl, cyclohexyl, or -cycloheptyl is optionally replaced with NH, NR_{N-5}, O, or S(=O)₀₋₂, and where cyclopentyl, cyclohexyl, or -cycloheptyl can be optionally substituted with one or two -C₁-C₃ alkyl, -F, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, =O, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(XX) C_2-C_{10} alkenyl containing one or two double bonds optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, -O-phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

5 (XXI) C_2-C_{10} alkynyl containing one or two triple bonds optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, -O-phenyl, $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(XXI) $-(CH_2)_{0-1}-CHR_{A-6}-(CH_2)_{0-1}-R_{A-aryl}$ where R_{A-aryl} is as defined above
10 and R_{A-6} is $-(CH_2)_{0-6}-OH$,

(XXII) $-(CH_2)_{0-1}-CHR_{A-6}-(CH_2)_{0-1}-R_{A-heteroaryl}$ where $R_{A-heteroaryl}$ and R_{A-6} is as defined above,

(XXIII) $-\text{CH}-(R_{A-aryl} \text{ or } R_{A-heteroaryl})-\text{CO}-O(C_1-C_4 \text{ alkyl})$ where R_{A-aryl} and $R_{A-heteroaryl}$ are as defined above,

15 (XXIV) $-\text{CH}(-CH_2-OH)-\text{CH}(-OH)-\text{micro-NO}_2$,

(XXV) $(C_1-C_6 \text{ alkyl})-O-(C_1-C_6 \text{ alkyl})-OH$,

(XXVII) $-\text{CH}_2-\text{NH}-\text{CH}_2-\text{CH}(-O-\text{CH}_2-\text{CH}_3)_2$,

(XXVIII) $-\text{H}$,

(XXIX) $-(CH_2)_{0-6}-C(=NR_{1-a})(NR_{1-a}R_{1-b})$ where R_{1-a} and R_{1-b} are as defined
20 above; or

(XXX)

$-\text{C}=\text{OC}(\text{HR}_6)\text{NHR}_7$, where R_6 and R_7 are as defined below,

$-\text{C}=\text{OR}_7$, where R_7 is as defined below,

$-\text{C}=\text{OOR}_7$, where R_7 is as defined below, or

25 $-\text{SOOR}_7$ where R_7 is as defined below,

wherein R_6 is:

hydrogen,

$C_1 - C_3$ alkyl,

phenyl,

30 thioalkoxyalkyl,

alkyl substituted aryl,

cycloalkyl,

cycloalkylalkyl,

hydroxyalkyl,
alkoxyalkyl,
aryloxyalkyl,
haloalkyl,
5 carboxyalkyl,
alkoxycarbonylalkyl,
aminoalkyl,
(N-protected)aminoalkyl,
alkylaminoalkyl,
10 ((N-protected)(alkyl)amino)alkyl,
dialkylaminoalkyl,
guanidinoalkyl,
lower alkenyl,
heterocyclic,
15 (heterocyclic)alkyl),
arylthioalkyl,
arylsulfonyalkyl,
(heterocyclic)thioalkyl,
(heterocyclic)sulfonylalkyl,
20 (heterocyclic)oxyalkyl,
arylalkoxyalkyl,
arylthioalkoxyalkyl,
arylalkylsulfonylalkyl,
(heterocyclic))alkoxyalkyl,
25 (heterocyclic)thioalkoxyalkyl,
(heterocyclic)alkylsulfonylalkyl,
cycloalkyloxyalkyl,
cycloalkylthioalkyl,
cycloalkylsulfonylalkyl,
30 cycloalkylalkoxyalkyl,
cycloalkylthioalkoxyalkyl,
cycloalkylalkylsulfonylalkyl,
aminocarbonyl,
alkylaminocarbonyl,

dialkylaminocarbonyl,
aroylalkyl,
(heterocyclic)carbonylalkyl,
polyhydroxyalkyl,
5 aminocarbonylalkyl,
alkylaminocarbonylalkyl,
dialkylaminocarbonylalkyl,
aryloxyalkyl, or
alkylsulfonylalkyl,

10 wherein heterocyclic is pyridyl, thiazolyl, isothiazolyl,
oxazolyl, isoxazolyl, furanyl, thienyl, tetrahydrofuranyl, tetrahydrothienyl and
tetrahydro[2H]pyranyl and wherein the heterocycle is unsubstituted or substituted with
one to three substituents independently selected from hydroxy, halo, amino, alkylamino,
dialkylamino, alkoxy, polyalkoxy, haloalkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl,
15 COOH, -SO₃H, lower alkenyl or lower alkyl;

wherein R₇ is:

C₁ - C₃ alkyl, .
phenyl,
thioalkoxyalkyl,
20 (aryl)alkyl,
cycloalkyl,
cycloalkylalkyl,
hydroxyalkyl,
alkoxyalkyl,
25 aryloxyalkyl,
haloalkyl,
carboxyalkyl,
alkoxycarbonylalkyl,
aminoalkyl,
30 (N-protected)aminocalkyl,
alkylaminoalkyl,
((N-protected)(alkyl)amino)alkyl,
dialkylaminoalkyl,
guanidinoalkyl,

lower alkenyl,
heterocyclic,
(heterocyclic)alkyl),
arylthioalkyl,
5 arylsulfonylalkyl,
(heterocyclic)thioalkyl,
(heterocyclic)sulfonylalkyl,
(heterocyclic)oxyalkyl,
arylalkoxyalkyl,
10 arylthioalkoxyalkyl,
arylalkylsulfonylalkyl,
(heterocyclic))alkoxyalkyl,
(heterocyclic)thioalkoxyalkyl,
(heterocyclic)alkylsulfonylalkyl,
15 cycloalkyloxyalkyl,
cycloalkylthioalkyl,
cycloalkylsulfonylalkyl,
cycloalkylalkoxyalkyl,
cycloalkylthioalkoxyalkyl,
20 cycloalkylalkylsulfonylalkyl,
aminocarbonyl,
alkylaminocarbonyl,
dialkylaminocarbonyl,
aroylalkyl,
25 (heterocyclic)carbonylalkyl,
polyhydroxyalkyl,
aminocarbonylalkyl,
alkylaminocarbonylalkyl,
dialkylaminocarbonylalkyl,
30 aryloxyalkyl, or
alkylsulfonylalkyl,

wherein heterocyclic is pyridyl, thiazolyl, isothiazolyl,
oxazolyl, isoxazolyl, furanyl, thienyl, tetrahydrofuranyl, tetrahydrothienyl and
tetrahydro[2H]pyranyl and wherein the heterocycle is unsubstituted or substituted with

one to three substituents independently selected from hydroxy, halo, amino, alkylamino, dialkylamino, alkoxy, polyalkoxy, haloalkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, COOH, -SO₃H, lower alkenyl or lower alkyl;

5 where X is -N, or -O, with the proviso that when X is O, R_B is absent;

and when X is N,

R_B is:

(I)-C₁-C₁₀ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH,
 10 -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, -OC=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, -S(=O)₀₋₂ R_{1-a} where R_{1-a} is as defined above, -NR_{1-a}C=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, -C=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, and -S(=O)₂ NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

15 (II) -(CH₂)₀₋₃-(C₃-C₈) cycloalkyl where cycloalkyl can be optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -CO-OH, -CO-O-(C₁-C₄ alkyl), and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(III) -(CR_{B-x}R_{B-y})₀₋₄-R_{B-aryl} where R_{B-x} and R_{B-y} are

20 (A) -H,
 (B) C₁-C₄ alkyl optionally substituted with one or two -OH,
 (C) C₁-C₄ alkoxy optionally substituted with one, two, or three of -
 F,

(D) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl,
 25 (E) C₂-C₆ alkenyl containing one or two double bonds,
 (F) C₂-C₆ alkynyl containing one or two triple bonds, or
 (G) phenyl,

and where R_{B-x} and R_{B-y} are taken together with the carbon to which they are attached to form a carbocycle of three, four, five, six or seven carbon
 30 atoms, optionally where one carbon atom is replaced by a heteroatom selected from the group consisting of -O-, -S-, -SO₂-, and -NR_{N-2} where R_{N-2} is as defined above, and R_{B-aryl} is the same as R_{N-aryl} and is defined above

(IV) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heteroaryl}}$ where $\text{R}_{\text{B-heteroaryl}}$ is the same as $\text{R}_{\text{N-heteroaryl}}$, $\text{R}_{\text{B-x}}$, and $\text{R}_{\text{B-y}}$ are as defined above,

(V) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-aryl}}-\text{R}_{\text{B-aryl}}$ where $\text{R}_{\text{B-aryl}}$, $\text{R}_{\text{B-x}}$, and $\text{R}_{\text{B-y}}$ are as defined above,

5 (VI) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-aryl}}-\text{R}_{\text{B-heteroaryl}}$ where $\text{R}_{\text{B-aryl}}$, $\text{R}_{\text{B-heteroaryl}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

(VII) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heteroaryl}}-\text{R}_{\text{B-aryl}}$ where $\text{R}_{\text{B-heteroaryl}}$, $\text{R}_{\text{B-aryl}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

10 (VIII) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heteroaryl}}-\text{R}_{\text{B-heteroaryl}}$ where $\text{R}_{\text{B-heteroaryl}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

(IX) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-aryl}}-\text{R}_{\text{B-heterocycle}}$ where $\text{R}_{\text{B-heterocycle}}$ is defined as $\text{R}_{\text{I-}}$ heterocycle, and where $\text{R}_{\text{B-aryl}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

(X) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heteroaryl}}-\text{R}_{\text{B-heterocycle}}$ where $\text{R}_{\text{B-heteroaryl}}$, $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

15 (XI) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heterocycle}}-\text{R}_{\text{B-aryl}}$ where $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-aryl}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

(XII) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heterocycle}}-\text{R}_{\text{B-heteroaryl}}$ where $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-heteroaryl}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

20 (XIII) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heterocycle}}-\text{R}_{\text{B-heterocycle}}$ where $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

(XIV) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heterocycle}}$ where $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

(XV) $[\text{C}(\text{R}_{\text{B-1}})(\text{R}_{\text{B-2}})]_{1-3}-\text{CO}-\text{N}-(\text{R}_{\text{B-3}})_2$ where $\text{R}_{\text{B-1}}$ and $\text{R}_{\text{B-2}}$ are the same or different and are selected from the group consisting of:

25 (A) -H,

(B) $\text{C}_1\text{-C}_6$ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $\text{-NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

30 (C) $\text{C}_2\text{-C}_6$ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $\text{-NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(D) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

5 (E) -(CH₂)₁₋₂-S(O)₀₋₂-(C₁-C₆ alkyl),

(F) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

10 (G) -(C₁-C₄ alkyl)-R_{B'-aryl} where R_{B'-aryl} is as defined above for R_{1-aryl},

(H) -(C₁-C₄ alkyl)-R_{B-heteroaryl} where R_{B-heteroaryl} is as defined above,

(I) -(C₁-C₄ alkyl)-R_{B-heterocycle} where R_{B-heterocycle} is as defined above,

(J) -R_{B-heteroaryl} where R_{B-heteroaryl} is as defined above,

15 (K) -R_{B-heterocycle} where R_{B-heterocycle} is as defined above,

(M) -(CH₂)₁₋₄-R_{B-4}-(CH₂)₀₋₄-R_{B'-aryl} where R_{B-4} is -O-, -S- or -NR_{B-5}- where R_{B-5} is C₁-C₆ alkyl, and where R_{B'-aryl} is defined above,

(N) -(CH₂)₁₋₄-R_{B-4}-(CH₂)₀₋₄-R_{B-heteroaryl} where R_{B-4} and R_{B-heteroaryl} are as defined above, and

20 (O) -R_{B'-aryl} where R_{B'-aryl} is as defined above,

and where R_{B-3} is the same or different and is:

(A) -H,

(B) -C₁-C₆ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(C) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(D) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃

alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(E) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(F) -R_{B'-aryl} where R_{B'-aryl} is as defined above,

(G) -R_{B-heteroaryl} where R_{B-heteroaryl} is as defined above,

(H) -R_{B-heterocycle} where R_{B-heterocycle} is as defined above,

(I) -(C₁-C₄ alkyl)-R_{B'-aryl} where R_{B'-aryl} is as defined above,

(J) -(C₁-C₄ alkyl)-R_{B-heteroaryl} where R_{B-heteroaryl} is as defined above,

(K) -(C₁-C₄ alkyl)-R_{B-heterocycle} where R_{B-heterocycle} is as defined

above, or

(XVI) -CH(R_{B-aryl})₂ where R_{B-aryl} are the same or different and are as defined above,

(XVII) -CH(R_{B-heteroaryl})₂ where R_{B-heteroaryl} are the same or different and are as defined above,

(XVIII) -CH(R_{B-aryl})(R_{B-heteroaryl}) where R_{B-aryl} and R_{B-heteroaryl} are as defined above,

(XIX) -cyclopentyl, -cyclohexyl, or -cycloheptyl ring fused to R_{B-aryl} or R_{B-heteroaryl} or R_{B-heterocycle} where R_{B-aryl} or R_{B-heteroaryl} or R_{B-heterocycle} are as defined above where one carbon of cyclopentyl, cyclohexyl, or -cycloheptyl is optionally replaced with NH, NR_{N-5}, O, or S(=O)₀₋₂, and where cyclopentyl, cyclohexyl, or -cycloheptyl can be optionally substituted with one or two -C₁-C₃ alkyl, -F, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, =O, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(XX) C₂-C₁₀ alkenyl containing one or two double bonds optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(XXI) C₂-C₁₀ alkynyl containing one or two triple bonds optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(XXI) $-(CH_2)_{0-1}-CHR_{C-6}-(CH_2)_{0-1}-R_{B-aryl}$ where R_{B-aryl} is as defined above and R_{C-6} is $-(CH_2)_{0-6}-OH$,

(XXII) $-(CH_2)_{0-1}-CHR_{B-6}-(CH_2)_{0-1}-R_{B-heteroaryl}$ where $R_{B-heteroaryl}$ and R_{C-6} is as defined above,

5 (XXIII) $-\text{CH}(-R_{B-aryl} \text{ or } R_{B-heteroaryl})-\text{CO}-\text{O}(\text{C}_1-\text{C}_4 \text{ alkyl})$ where R_{B-aryl} and $R_{B-heteroaryl}$ are as defined above,

(XXIV) $-\text{CH}(-\text{CH}_2-\text{OH})-\text{CH}(-\text{OH})-\text{micro-NO}_2$,

(XXV) $(\text{C}_1-\text{C}_6 \text{ alkyl})-\text{O}-(\text{C}_1-\text{C}_6 \text{ alkyl})-\text{OH}$,

(XXVII) $-\text{CH}_2-\text{NH}-\text{CH}_2-\text{CH}(-\text{O}-\text{CH}_2-\text{CH}_3)_2$,

10 (XXVIII) $-\text{H}$, or

(XXIX) $-(CH_2)_{0-6}-\text{C}(=\text{NR}_{1-a})(\text{NR}_{1-a}\text{R}_{1-b})$ where R_{1-a} and R_{1-b} are as defined above;

or a pharmaceutically acceptable salt thereof.

15 55. A method of treatment according to claim 54 where the disease is Alzheimer's disease.

56. A method of treatment according to claim 54 where the method is helping prevent or delay the onset of Alzheimer's disease.

20 57. A method of treatment according to claim 54 where the disease is mild cognitive impairment.

58. A method of treatment according to claim 54 where the disease is Down's syndrome.

25 59. A method of treatment according to claim 54 where the disease is Hereditary Cerebral Hemorrhage with Amyloidosis of the Dutch-Type.

30 60. A method of treatment according to claim 54 where the disease is cerebral amyloid angiopathy.

61. A method of treatment according to claim 54 where the disease is degenerative dementias.

62. A method of treatment according to claim 54 where the disease is diffuse Lewy body type of Alzheimer's disease.

63. A method of treatment according to claim 54 where the method is treating an existing disease.

64. A method of treatment according to claim 54 where the method is preventing a disease from developing.

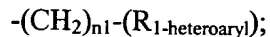
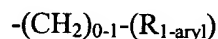
65. A method of treatment according to claim 54 where the therapeutically effective amount for oral administration is from about 0.1 mg/day to about 1,000 mg/day; for parenteral, sublingual, intranasal, intrathecal administration is from about 0.5 to about 100 mg/day; for depo administration and implants is from about 0.5 mg/day to about 50 mg/day; for topical administration is from about 0.5 mg/day to about 200 mg/day; for rectal administration is from about 0.5 mg to about 500 mg.

66. A method of treatment according to claim 65 where the therapeutically effective amount is for oral administration is from about 1 mg/day to about 100 mg/day and for parenteral administration is from about 5 to about 50 mg daily.

67. A method of treatment according to claim 66 where the therapeutically effective amount for oral administration is from about 5 mg/day to about 50 mg/day.

68. A method of treatment according to claim 54:

where R_1 is:



where R_N is:

$R_{N-1}-X_N$, where X_N is selected from the group consisting of:

$-CO-$, and

$-SO_2-$,

where R_{N-1} is selected from the group consisting of:

$-R_{N-aryl}$, and

$-R_{N-heteroaryl}$, or

$-\text{CO}-\text{CH}(-(\text{CH}_2)_{0-2}-\text{O}-\text{R}_{\text{N}-10})-(\text{CH}_2)_{0-2}-\text{R}_{\text{N-aryl}}/\text{R}_{\text{N-heteroaryl}});$ and

where R_A and R_B are each independently:

$-\text{C}_1-\text{C}_8$ alkyl,

$-(\text{CH}_2)_{0-3}-(\text{C}_3-\text{C}_7)$ cycloalkyl,

5

$-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-aryl}},$

$-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}},$

$-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}},$

-cyclopentyl or -cyclohexyl ring fused to $\text{R}_{\text{A-aryl}}$ or $\text{R}_{\text{A-heteroaryl}}$ or $\text{R}_{\text{A-}}$

heterocycle; and

10

where X is:

-N, or

-O, with the proviso that if X is O, R_B is absent.

69. A method of treatment according to claim-68:

15

where R_1 is:

$-(\text{CH}_2)-(\text{R}_{1-\text{aryl}}),$ or

$-(\text{CH}_2)-(\text{R}_{1-\text{heteroaryl}});$

where R_2 is -H;

where R_3 is -H;

20

where R_N is:

$\text{R}_{\text{N-1}}-\text{X}_\text{N}$ - where X_N is:

$-\text{CO}-,$

where $\text{R}_{\text{N-1}}$ is selected from the group consisting of:

$-\text{R}_{\text{N-aryl}},$ and

25

$-\text{R}_{\text{N-heteroaryl}};$

where R_A and R_B are each independently:

$-(\text{CH}_2)_{0-3}-(\text{C}_3-\text{C}_7)$ cycloalkyl,

$-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-aryl}},$

$-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}},$

30

$-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}},$ or

-cyclopentyl or -cyclohexyl ring fused to a $\text{R}_{\text{A-aryl}}$ or $\text{R}_{\text{A-heteroaryl}}$ or $\text{R}_{\text{A-}}$

heterocycle; and

where X is:

-N, or

-O with the proviso that if X is O, R_B is absent.

70. A method of treatment according to claim 69 where R_A and R_B are each independently:

- 5 -(CR_{C-x}R_{C-y})₀₋₄-R_{C-aryl},
 -(CR_{C-x}R_{C-y})₀₋₄-R_{C-heteroaryl},
 -cyclopentyl or -cyclohexyl ring fused to a R_{C-aryl} or R_{C-heteroaryl} or R_{C-heterocycle}.

71. A method of treatment according to claim 54 where R₁ is:

- 10 -(CH₂)-(R_{1-aryl}) where R_{1-aryl} is phenyl.

72. A method of treatment according to claim 71 where R₁ is:

 -(CH₂)-(R_{1-aryl}) where R_{1-aryl} is phenyl substituted with two -F.

- 15 73. A method of treatment according to claim 72 where the -F substitution is 3,5-difluorobenzyl.

74. A method of treatment according to claim 54 where R₂ is -H.

- 20 75. A method of treatment according to claim 54 where R₃ is -H.

76. A method of treatment according to claim 54 where R_N is

 R_{N-1}-X_N- where X_N is -CO-, where R_{N-1} is R_{N-aryl} where R_{N-aryl} is phenyl substituted with one -CO-NR_{N-2}R_{N-3} where the substitution on phenyl is 1,3-.

25

77. A method of treatment according to claim 76 where R_{N-2} and R_{N-3} are the same and are C₃ alkyl.

78. A method of treatment according to claim 54 where R_N is

- 30 R_{N-1}-X_N- where X_N is -CO-, where R_{N-1} is R_{N-aryl} where R_{N-aryl} is phenyl substituted with one C₁ alkyl and with one -CO-NR_{N-2}R_{N-3} where the substitution on the phenyl is 1,3,5-.

79. A method of treatment according to claim 78 where R_{N-2} and R_{N-3} are the same and are C_3 alkyl.

80. A method of treatment according to claim 54 where R_N is

5 $R_{N-1}-X_N-$ where X_N is $-CO-$, where R_{N-1} is $R_{N-heteroaryl}$ where $R_{N-heteroaryl}$ is substituted with one $-CO-NR_{N-2}R_{N-3}$.

81. A method of treatment according to claim 80 where R_{N-2} and R_{N-3} are the same and are $-C_3$ alkyl.

10

82. A method of treatment according to claim 54, where R_A is:

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-aryl}$ where R_{A-aryl} is phenyl,

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heteroaryl}$,

-cyclopentyl or -cyclohexyl ring fused to a R_{A-aryl} or $R_{A-heteroaryl}$ or $R_{A-heterocycle}$.

15

83. A method of treatment according to claim 82, where R_A is:

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-aryl}$ where R_{A-aryl} is phenyl.

20

84. A method of treatment according to claim 83, where phenyl is substituted in the 3-position or 3,5-positions.

85. A method of treatment according to claim 82, where R_A is

$-(CH_2)-R_{A-heteroaryl}$.

25

86. A method of treatment according to claim 82, where R_A is:

$-(CH_2)-R_{A-heterocycle}$.

87. A method of treatment according to claim 86, where R_A is:

-cyclohexyl ring fused to a phenyl ring.

30

88. A method of treatment according to claim 54, where R_B is:

$-(CR_{B-x}R_{B-y})_{0-4}-R_{B-aryl}$ where R_{B-aryl} is phenyl,

$-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heteroaryl}$,

-cyclopentyl or -cyclohexyl ring fused to a R_{B-aryl} or $R_{B-heteroaryl}$ or $R_{B-heterocycle}$.

89. A method of treatment according to claim 88, where R_B is:

$-(CR_{B-x}R_{B-y})_{0-4}-R_{B-aryl}$ where R_{B-aryl} is phenyl.

90. A method of treatment according to claim 89 where phenyl is substituted in the 3-position or 3,5-positions.

91. A method of treatment according to claim 88 where R_B is:

$-(CH_2)-R_{B-heteroaryl}$.

92. A method of treatment according to claim 88 where R_B is:

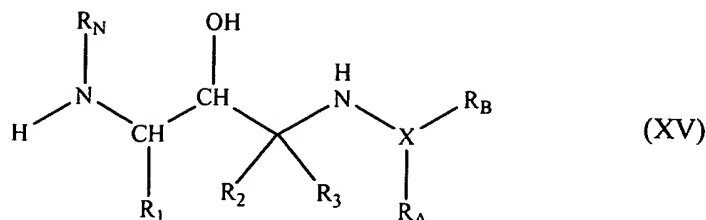
$-(CH_2)-R_{B-heterocycle}$.

93. A method of treatment according to claim 88 where R_B is:

cyclohexyl ring fused to a phenyl ring.

94. A method of treatment according to claim 54 where the pharmaceutically acceptable salt is selected from the group consisting of salts of the following acids acetic, aspartic, benzenesulfonic, benzoic, bicarbonic, bisulfuric, bitartaric, butyric, calcium edetate, camsylic, carbonic, chlorobenzoic, citric, edetic, edisylic, estolic, esyl, esylic, formic, fumaric, gluceptic, gluconic, glutamic, glycolylarsanilic, hexamic, hexylresorcinoic, hydrabamic, hydrobromic, hydrochloric, hydroiodic, hydroxynaphthoic, isethionic, lactic, lactobionic, maleic, malic, malonic, mandelic, methanesulfonic, methylnitric, methylsulfuric, mucic, muconic, napsylic, nitric, oxalic, p-nitromethanesulfonic, pamoic, pantothenic, phosphoric, monohydrogen phosphoric, dihydrogen phosphoric, phthalic, polygalactouronic, propionic, salicylic, stearic, succinic, succinic, sulfamic, sulfanilic, sulfonic, sulfuric, tannic, tartaric, teoclic and toluenesulfonic.

95. A method for inhibiting beta-secretase activity, comprising exposing said beta-secretase to an effective inhibitory amount of a compound of the formula XV



where R_1 is:

- (I) $\text{C}_1\text{-C}_6$ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, $\text{C}_1\text{-C}_7$ alkyl (optionally substituted with $\text{C}_1\text{-C}_3$ alkyl and $\text{C}_1\text{-C}_3$ alkoxy), $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, $\text{C}_1\text{-C}_3$ alkoxy, $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are $-\text{H}$ or $\text{C}_1\text{-C}_6$ alkyl, and $-\text{OC}=\text{O NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(II) $-\text{CH}_2\text{-S(O)}_{0-2}\text{-(C}_1\text{-C}_6\text{ alkyl)}$,

(III) $-\text{CH}_2\text{-CH}_2\text{-S(O)}_{0-2}\text{-(C}_1\text{-C}_6\text{ alkyl)}$,

- (IV) $\text{C}_2\text{-C}_6$ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of $-\text{F}$, $-\text{Cl}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, $\text{C}_1\text{-C}_3$ alkoxy, and $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are $-\text{H}$ or $\text{C}_1\text{-C}_6$ alkyl,

- (V) $\text{C}_2\text{-C}_6$ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of $-\text{F}$, $-\text{Cl}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, $\text{C}_1\text{-C}_3$ alkoxy, and $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are $-\text{H}$ or $\text{C}_1\text{-C}_6$ alkyl,

(VI) $-(\text{CH}_2)_{n1}\text{-(R}_{1\text{-aryl}})$ where n_1 is zero or one and where $\text{R}_{1\text{-aryl}}$ is phenyl, 1-naphthyl, 2-naphthyl and indanyl, indenyl, dihydronaphthalyl, or tetralinyl optionally substituted with one, two, three or four of the following substituents on the aryl ring:

- (A) $\text{C}_1\text{-C}_6$ alkyl optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, and $\text{C}_1\text{-C}_3$ alkoxy, and $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

- (B) $\text{C}_2\text{-C}_6$ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of $-\text{F}$, $-\text{Cl}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, $\text{C}_1\text{-C}_3$ alkoxy, and $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are $-\text{H}$ or $\text{C}_1\text{-C}_6$ alkyl,

(C) $\text{C}_2\text{-C}_6$ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of $-\text{F}$, $-\text{Cl}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, $\text{C}_1\text{-C}_3$ alkoxy, and $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are $-\text{H}$ or $\text{C}_1\text{-C}_6$ alkyl,

- (D) $-\text{F}$, Cl , $-\text{Br}$ or $-\text{I}$,

(F) -C₁-C₆ alkoxy optionally substituted with one, two or three of
- F,

(G) -NR_{N-2}R_{N-3} where R_{N-2} and R_{N-3} are as defined below,

(H) -OH,

5 (I) -C≡N,

(J) C₃-C₇ cycloalkyl, optionally substituted with one, two or three
substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃
alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(K) -CO-(C₁-C₄ alkyl),

10 (L) -SO₂-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(M) -CO-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, or

(N) -SO₂-(C₁-C₄ alkyl),

(VII) -(CH₂)_{n1}-(R_{1-heteroaryl}) where n₁ is as defined above and where R₁-

heteroaryl is selected from the group consisting of:

15 pyridinyl,
pyrimidinyl,
quinolinyl,
benzothienyl,
indolyl,
20 indolinyl,
pyridazinyl,
pyrazinyl,
isoquinolyl,
quinazolinyl,
25 quinoxalinyl,
phthalazinyl,
imidazolyl,
isoxazolyl,
pyrazolyl,
30 oxazolyl,
thiazolyl,
indolizinyl,
indazolyl,

5 benzothiazolyl,
 benzimidazolyl,
 benzofuranyl,
 furanyl,
 thienyl,
 pyrrolyl,
 oxadiazolyl,
 thiadiazolyl,
10 triazolyl,
 tetrazolyl,
 oxazolopyridinyl,
 imidazopyridinyl,
 isothiazolyl,
 naphthyridinyl,
15 cinnolinyl,
 carbazolyl,
 beta-carbolinyl,
 isochromanyl,
 chromanyl,
20 tetrahydroisoquinolinyl,
 isoindolinyl,
 isobenzotetrahydrofuranlyl,
 isobenzotetrahydrothienyl,
 isobenzothienyl,
25 benzoxazolyl,
 pyridopyridinyl,
 benzotetrahydrofuranlyl,
 benzotetrahydrothienyl,
 purinyl,
30 benzodioxolyl,
 triazinyl,
 phenoxazinyl,
 phenothiazinyl,
 pteridinyl,

5 benzothiazolyl,
imidazopyridinyl,
imidazothiazolyl,
dihydrobenzisoxazinyl,
benzisoxazinyl,
benzoxazinyl,
dihydrobenziso-thiazinyl,
benzopyranyl,
10 benzothiopyranyl,
coumarinyl,
isocoumarinyl,
chromonyl,
chromanonyl,
15 pyridinyl-N-oxide,
tetrahydroquinolinyl
dihydroquinolinyl
dihydroquinolinonyl
dihydroisoquinolinonyl
dihydrocoumarinyl
20 dihydroisocoumarinyl
isoindolinonyl
benzodioxanyl
benzoxazolinonyl
pyrrolyl N-oxide,
25 pyrimidinyl N-oxide,
pyridazinyl N-oxide,
pyrazinyl N-oxide,
quinolinyl N-oxide,
indolyl N-oxide,
30 indolinyl N-oxide,
isoquinolyl N-oxide,
quinazolinyl N-oxide,
quinoxaliny N-oxide,
phthalazinyl N-oxide,

imidazolyl N-oxide,
isoxazolyl N-oxide,
oxazolyl N-oxide,
thiazolyl N-oxide,
5 indoliziny N-oxide,
indazolyl N-oxide,
benzothiazolyl N-oxide,
benzimidazolyl N-oxide,
pyrrolyl N-oxide,
10 oxadiazolyl N-oxide,
thiadiazolyl N-oxide,
triazolyl N-oxide,
tetrazolyl N-oxide,
benzothiopyranyl S-oxide, and
15 benzothiopyranyl S,S-dioxide,

where the $R_{1\text{-heteroaryl}}$ group is bonded to $-(CH_2)_{n1}-$ by any ring atom of the parent $R_{1\text{-heteroaryl}}$ group substituted by hydrogen such that the new bond to the $R_{1\text{-heteroaryl}}$ group replaces the hydrogen atom and its bond, where heteroaryl is optionally substituted with one, two, three or four of:

- 20 (1) C_1 - C_6 alkyl optionally substituted with one, two or three substituents selected from the group consisting of C_1 - C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C \equiv N, -CF $_3$, C_1 - C_3 alkoxy, and -NR $_{1-a}$ R $_{1-b}$ where R $_{1-a}$ and R $_{1-b}$ are as defined above,
- (2) C_2 - C_6 alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -
25 Cl, -OH, -SH, -C \equiv N, -CF $_3$, C_1 - C_3 alkoxy, and -NR $_{1-a}$ R $_{1-b}$ where R $_{1-a}$ and R $_{1-b}$ are -H or C_1 - C_6 alkyl,
- (3) C_2 - C_6 alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -
30 Cl, -OH, -SH, -C \equiv N, -CF $_3$, C_1 - C_3 alkoxy, and -NR $_{1-a}$ R $_{1-b}$ where R $_{1-a}$ and R $_{1-b}$ are -H or C_1 - C_6 alkyl,
- (4) -F, Cl, -Br or -I,
- (6) - C_1 - C_6 alkoxy optionally substituted with one, two, or three of -F,

- (7) $-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are as defined below,
(8) $-OH$,
(9) $-C\equiv N$,
(10) C_3-C_7 cycloalkyl, optionally substituted with one, two
5 or three substituents selected from the group consisting of $-F$, $-Cl$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$,
 C_1-C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are $-H$ or C_1-C_6 alkyl,
(11) $-CO-(C_1-C_4 \text{ alkyl})$,
(12) $-SO_2-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined
above,
10 (13) $-CO-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined
above, or
(14) $-SO_2-(C_1-C_4 \text{ alkyl})$, with the proviso that when n_1 is
zero $R_{1-\text{heteroaryl}}$ is not bonded to the carbon chain by nitrogen; or
(VIII) $-(CH_2)_{n_1}-(R_{1-\text{heterocycle}})$ where n_1 is as defined above and $R_{1-\text{heterocycle}}$
15 is selected from the group consisting of:
morpholinyl,
thiomorpholinyl,
thiomorpholinyl S-oxide,
thiomorpholinyl S,S-dioxide,
20 piperazinyl,
homopiperazinyl,
pyrrolidinyl,
pyrrolinyl,
tetrahydropyranyl,
25 piperidinyl,
tetrahydrofuranyl,
tetrahydrothienyl,
homopiperidinyl,
homomorpholinyl,
30 homothiomorpholinyl,
homothiomorpholinyl S,S-dioxide,
oxazolidinonyl,
dihydropyrazolyl,

dihydropyrrolyl,
 dihydropyrazinyl,
 dihydropyridinyl,
 dihydropyrimidinyl,
 dihydrofuryl,
 dihydropyranyl,
 tetrahydrothienyl S-oxide,
 tetrahydrothienyl S,S-dioxide, and
 homothiomorpholinyl S-oxide,

5
 10 where the $R_{1\text{-heterocycle}}$ group is bonded by any atom of the parent R_1 .
 heterocycle group substituted by hydrogen such that the new bond to the $R_{1\text{-heterocycle}}$ group
 replaces the hydrogen atom and its bond, where heterocycle is optionally substituted with
 one, two, three or four:

15 (1) C_1 - C_6 alkyl optionally substituted with one, two or three
 substituents selected from the group consisting of C_1 - C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH,
 - $C\equiv N$, - CF_3 , C_1 - C_3 alkoxy, and - $NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

20 (2) C_2 - C_6 alkenyl with one or two double bonds, optionally
 substituted with one, two or three substituents selected from the group consisting of -F, -
 Cl, -OH, -SH, - $C\equiv N$, - CF_3 , C_1 - C_3 alkoxy, and - $NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are -H or C_1 -
 C_6 alkyl,

(3) C_2 - C_6 alkynyl with one or two triple bonds, optionally
 substituted with one, two or three substituents selected from the group consisting of -F, -
 Cl, -OH, -SH, - $C\equiv N$, - CF_3 , C_1 - C_3 alkoxy, and - $NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are -H or C_1 -
 C_6 alkyl,

25 (4) -F, Cl, -Br or -I,

(5) C_1 - C_6 alkoxy,

(6) - C_1 - C_6 alkoxy optionally substituted with one, two, or
 three -F,

(7) - $NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are as defined below,

30 (8) -OH,

(9) - $C\equiv N$.

(10) C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(11) -CO-(C₁-C₄ alkyl),

5 (12) -SO₂-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(13) -CO-NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(14) -SO₂-(C₁-C₄ alkyl), or

10 (15) =O, with the proviso that when n₁ is zero R_{1-heterocycle} is not bonded to the carbon chain by nitrogen;

where R₂ is:

(I)-H,

15 (II) C₁-C₆ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(III) -(CH₂)₀₋₄-R₂₋₁ where R₂₋₁ is R_{1-aryl} or R_{1-heteroaryl} where R_{1-aryl} and R_{1-heteroaryl} are as defined above;

20 (IV) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

(V) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl, or

25 (VI) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl;

30 where R₃ is:

(I)-H,

(II) C₁-C₆ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH,

-SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(III) -(CH₂)₀₋₄-R₂₋₁ where R₂₋₁ is R_{1-aryl} or R_{1-heteroaryl} where R_{1-aryl} and R_{1-heteroaryl} are as defined above

(IV) C₂-C₆ alkenyl with one or two double bonds,

5 (V) C₂-C₆ alkynyl with one or two triple bonds; or

(VI) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of -F, -Cl, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are -H or C₁-C₆ alkyl,

and where R₂ and R₃ are taken together with the carbon to which they are attached to form a carbocycle of three, four, five, six, or seven carbon atoms, optionally where one carbon atom is replaced by a heteroatom selected from the group consisting of -O-, -S-, -SO₂-, and -NR_{N-2}-, where R_{N-2} is selected from the group consisting of:

(a) -H,

(b) -C₁-C₆ alkyl optionally substituted with one
15 substituent selected from the group consisting of:

(i) -OH, and

(ii) -NH₂,

(c) -C₁-C₆ alkyl optionally substituted with one,
two, or three -F, -Cl, -Br, or -I,

20 (d) -C₃-C₇ cycloalkyl,

(e) -(C₁-C₂ alkyl)-(C₃-C₇ cycloalkyl),

(f) -(C₁-C₆ alkyl)-O-(C₁-C₃ alkyl),

(g) -C₂-C₆ alkenyl with one or two double bonds,

(h) -C₂-C₆ alkynyl with one or two triple bonds,

25 (i) -C₁-C₆ alkyl chain with one double bond and one triple bond,

(j) -R_{1-aryl} where R_{1-aryl} is as defined above, and

(k) -R_{1-heteroaryl} where R_{1-heteroaryl} is as defined above;

30 where R_N is:

(I) R_{N-1}-X_N- where X_N is selected from the group consisting of:

(A) -CO-,

(B) -SO₂-,

(C) $-(CR'R'')_{1-6}$ where R' and R'' are the same or different and are $-H$ and C_1-C_4 alkyl,

(D) $-\text{CO}-(CR'R'')_{1-6}-X_{N-1}$ where X_{N-1} is selected from the group consisting of $-O-$, $-S-$ and $-\text{NR}'-$ and where R' and R'' are as defined above, and

5 (E) a single bond;

where R_{N-1} is selected from the group consisting of:

(A) $R_{N\text{-aryl}}$ where $R_{N\text{-aryl}}$ is phenyl, 1-naphthyl, 2-naphthyl, tetralinyl, indanyl, 6,7,8,9-tetrahydro-5H-benzo[a]cycloheptenyl, or dihydronaphthyl optionally substituted with one, two or three of the following substituents which can be
10 the same or different and are:

(1) C_1-C_6 alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, and $-\text{NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

15 (2) $-OH$,

(3) $-\text{NO}_2$,

(4) $-F$, $-Cl$, $-Br$, $-I$,

(5) $-\text{CO}-OH$,

(6) $-C\equiv N$,

20 (7) $-(\text{CH}_2)_{0-4}-\text{CO}-\text{NR}_{N-2}\text{R}_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are selected from the group consisting of:

(a) $-H$,

(b) $-C_1-C_6$ alkyl optionally substituted with one substituent selected from the group consisting of:

25 (i) $-OH$, and

(ii) $-\text{NH}_2$,

(c) $-C_1-C_6$ alkyl optionally substituted with one, two, or three $-F$, $-Cl$, $-Br$, or $-I$,

(d) $-C_3-C_7$ cycloalkyl,

30 (e) $-(C_1-C_2 \text{ alkyl})-(C_3-C_7 \text{ cycloalkyl})$,

(f) $-(C_1-C_6 \text{ alkyl})-O-(C_1-C_3 \text{ alkyl})$,

(g) $-C_2-C_6$ alkenyl with one or two double bonds,

(h) $-C_2-C_6$ alkynyl with one or two triple bonds,

(i) $-C_1-C_6$ alkyl chain with one double bond and one triple bond,

(j) $-R_{1-aryl}$ where R_{1-aryl} is as defined above, and

(k) $-R_{1-heteroaryl}$ where $R_{1-heteroaryl}$ is as defined above,

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(8) $-(CH_2)_{0-4}-CO-(C_1-C_{12}$ alkyl),

double bonds),

(10) $-(CH_2)_{0-4}-CO-(C_2-C_{12}$ alkenyl with one, two or three

triple bonds),

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(11) $-(CH_2)_{0-4}-CO-(C_3-C_7$ cycloalkyl),

(12) $-(CH_2)_{0-4}-CO-R_{1-aryl}$ where R_{1-aryl} is as defined above,

(13) $-(CH_2)_{0-4}-CO-R_{1-heteroaryl}$ where $R_{1-heteroaryl}$ is as defined

above,

(14) $-(CH_2)_{0-4}-CO-R_{1-heterocycle}$ where $R_{1-heterocycle}$ is as

15 defined above,

(15) $-(CH_2)_{0-4}-CO-R_{N-4}$ where R_{N-4} is selected from the

group consisting of morpholinyl, thiomorpholinyl, piperazinyl, piperidinyl,

homomorpholinyl, homothiomorpholinyl, homothiomorpholinyl S-oxide,

homothiomorpholinyl S,S-dioxide, pyrrolinyl and pyrrolidinyl where each group is

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optionally substituted with one, two, three, or four of C_1-C_6 alkyl,

(16) $-(CH_2)_{0-4}-CO-O-R_{N-5}$ where R_{N-5} is selected from the

group consisting of:

(a) C_1-C_6 alkyl,

(b) $-(CH_2)_{0-2}-(R_{1-aryl})$ where R_{1-aryl} is as defined

25 above,

(c) C_2-C_6 alkenyl containing one or two double

bonds,

(d) C_2-C_6 alkynyl containing one or two triple

bonds,

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(e) C_3-C_7 cycloalkyl, and

(f) $-(CH_2)_{0-2}-(R_{1-heteroaryl})$ where $R_{1-heteroaryl}$ is as

defined above,

(17) $-(CH_2)_{0-4}-SO_2-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are as

defined above,

376

- (18) $-(CH_2)_{0-4}-SO-(C_1-C_8 \text{ alkyl})$,
 (19) $-(CH_2)_{0-4}-SO_2-(C_1-C_{12} \text{ alkyl})$,
 (20) $-(CH_2)_{0-4}-SO_2-(C_3-C_7 \text{ cycloalkyl})$,
 (21) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-O-R_{N-5}$ where R_{N-5} can be
 5 the same or different and is as defined above,
 (22) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-N(R_{N-5})_2$, where R_{N-5} can
 be the same or different and is as defined above,
 (23) $-(CH_2)_{0-4}-N-CS-N(R_{N-5})_2$, where R_{N-5} can be the same
 or different and is as defined above,
 10 (24) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-R_{N-2}$ where R_{N-5} and R_{N-2}
 can be the same or different and are as defined above,
 (25) $-(CH_2)_{0-4}-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} can be the
 same or different and are as defined above,
 (26) $-(CH_2)_{0-4}-R_{N-4}$ where R_{N-4} is as defined above,
 15 (27) $-(CH_2)_{0-4}-O-CO-(C_1-C_6 \text{ alkyl})$,
 (28) $-(CH_2)_{0-4}-O-P(O)-(OR_{N-aryl-1})_2$ where $R_{N-aryl-1}$ is $-H$ or
 C_1-C_4 alkyl,
 (29) $-(CH_2)_{0-4}-O-CO-N(R_{N-5})_2$ where R_{N-5} is as defined
 above,
 20 (30) $-(CH_2)_{0-4}-O-CS-N(R_{N-5})_2$ where R_{N-5} is as defined
 above,
 (31) $-(CH_2)_{0-4}-O-(R_{N-5})_2$ where R_{N-5} is as defined above,
 (32) $-(CH_2)_{0-4}-O-(R_{N-5})_2-COOH$ where R_{N-5} is as defined
 above,
 25 (33) $-(CH_2)_{0-4}-S-(R_{N-5})_2$ where R_{N-5} is as defined above,
 (34) $-(CH_2)_{0-4}-O-(C_1-C_6 \text{ alkyl optionally substituted with}$
 one, two, three, four, or five of $-F$),
 (35) C_3-C_7 cycloalkyl,
 (36) C_2-C_6 alkenyl with one or two double bonds optionally
 30 substituted with C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_3 alkoxy, or $-$
 $NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(37) C₂-C₆ alkynyl with one or two triple bonds optionally substituted with C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(38) -(CH₂)₀₋₄-N(-H or R_{N-5})-SO₂-R_{N-2} where R_{N-5} and R_{N-2} can be the same or different and are as described above, or

(39) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl,

(B) -R_{N-heteroaryl} where R_{N-heteroaryl} is selected from the group consisting of:

pyridinyl,
pyrimidinyl,
quinolinyl,
benzothienyl,
indolyl,
indolinyl,
pyridazinyl,
pyrazinyl,
isoindolyl,
isoquinolyl,
quinazolinyl,
quinoxalinyl,
phthalazinyl,
imidazolyl,
isoxazolyl,
pyrazolyl,
oxazolyl,
thiazolyl,
indolizinyl,
indazolyl,
benzothiazolyl,
benzimidazolyl,
benzofuranyl,
furanyl,
thienyl,

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pyrrolyl,
oxadiazolyl,
thiadiazolyl,
triazolyl,
tetrazolyl,
oxazolopyridinyl,
imidazopyridinyl,
isothiazolyl,
naphthyridinyl,
cinnolinyl,
carbazolyl,
beta-carbolinyl,
isochromanyl,
chromanyl,
tetrahydroisoquinolinyl,
isoindolinyl,
isobenzotetrahydrofuranyl,
isobenzotetrahydrothienyl,
isobenzothienyl,
benzoxazolyl,
pyridopyridinyl,
benzotetrahydrofuranyl,
benzotetrahydrothienyl,
purinyl,
benzodioxolyl,
triazinyl,
phenoxazinyl,
phenothiazinyl,
pteridinyl,
benzothiazolyl,
imidazopyridinyl,
imidazothiazolyl,
dihydrobenzisoxazinyl,
benzisoxazinyl,

5 benzoxazinyI,
dihydrobenzisothiazinyI,
benzopyranyI,
benzothiopyranyI,
coumarinyI,
isocoumarinyI,
chromonyI,
chromanonyI,
10 pyridinyI-N-oxide,
tetrahydroquinolinyI,
dihydroquinolinyI,
dihydroquinolinonyI,
dihydroisoquinolinonyI,
15 dihydrocoumarinyI,
dihydroisocoumarinyI,
isoindolinonyI,
benzodioxanyI,
benzoxazolinonyI,
20 pyrrolyI N-oxide,
pyrimidinyl N-oxide,
pyridazinyI N-oxide,
pyrazinyI N-oxide,
quinolinyI N-oxide,
indolyl N-oxide,
25 indolinyI N-oxide,
isoquinolyl N-oxide,
quinazolinyl N-oxide,
quinoxalinyI N-oxide,
phthalazinyI N-oxide,
30 imidazolyl N-oxide,
isoxazolyl N-oxide,
oxazolyl N-oxide,
thiazolyl N-oxide,
indolizinyI N-oxide,

indazolyl N-oxide,
 benzothiazolyl N-oxide,
 benzimidazolyl N-oxide,
 pyrrolyl N-oxide,
 5 oxadiazolyl N-oxide,
 thiadiazolyl N-oxide,
 triazolyl N-oxide,
 tetrazolyl N-oxide,
 benzothiopyranyl S-oxide, and
 10 benzothiopyranyl S,S-dioxide

where the $R_{N\text{-heteroaryl}}$ group is bonded by any atom of the parent R_N -heteroaryl group substituted by hydrogen such that the new bond to the $R_{N\text{-heteroaryl}}$ group replaces the hydrogen atom and its bond, where heteroaryl is optionally substituted with one, two, three, or four of:

15 (1) C_1 - C_6 alkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1 - C_3 alkyl, -F, -Cl, -Br, -I, -OH, -SH, $-C\equiv N$, $-CF_3$, C_1 - C_3 alkoxy, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

20 (2) -OH,
 (3) $-NO_2$,
 (4) -F, -Cl, -Br, or -I,
 (5) $-CO-OH$,
 (6) $-C\equiv N$,
 (7) $-(CH_2)_{0-4}-CO-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the
 25 same or different and are selected from the group consisting of:

(a) -H,
 (b) $-C_1$ - C_6 alkyl optionally substituted with one
 substituent selected from the group consisting of:
 30 (i) -OH, and
 (ii) $-NH_2$,
 (c) $-C_1$ - C_6 alkyl optionally substituted with one,
 two, or three -F, -Cl, -Br, -I,
 (d) $-C_3$ - C_7 cycloalkyl,

(e) $-(C_1-C_2 \text{ alkyl})-(C_3-C_7 \text{ cycloalkyl})$,
 (f) $-(C_1-C_6 \text{ alkyl})-O-(C_1-C_3 \text{ alkyl})$,
 (g) $-C_2-C_6 \text{ alkenyl}$ with one or two double bonds,
 (h) $-C_2-C_6 \text{ alkynyl}$ with one or two triple bonds,
 5 (i) $-C_1-C_6 \text{ alkyl chain}$ with one double bond and one
 triple bond,

(j) $-R_{1\text{-aryl}}$ where $R_{1\text{-aryl}}$ is as defined above,
 (k) $-R_{1\text{-heteroaryl}}$ where $R_{1\text{-heteroaryl}}$ is as defined above,
 (8) $-(CH_2)_{0-4}-CO-(C_1-C_{12} \text{ alkyl})$,
 10 (9) $-(CH_2)_{0-4}-CO-(C_2-C_{12} \text{ alkenyl with one, two or three}$
 double bonds),
 (10) $-(CH_2)_{0-4}-CO-(C_2-C_{12} \text{ alkynyl with one, two or three}$
 triple bonds),

(11) $-(CH_2)_{0-4}-CO-(C_3-C_7 \text{ cycloalkyl})$,
 15 (12) $-(CH_2)_{0-4}-CO-R_{1\text{-aryl}}$ where $R_{1\text{-aryl}}$ is as defined above,
 (13) $-(CH_2)_{0-4}-CO-R_{1\text{-heteroaryl}}$ where $R_{1\text{-heteroaryl}}$ is as defined
 above,
 (14) $-(CH_2)_{0-4}-CO-R_{1\text{-heterocycle}}$ where $R_{1\text{-heterocycle}}$ is as
 defined above,

20 (15) $-(CH_2)_{0-4}-CO-R_{N-4}$ where R_{N-4} is selected from the
 group consisting of morpholinyl, thiomorpholinyl, piperazinyl, piperidinyl,
 homomorpholinyl, homothiomorpholinyl, homothiomorpholinyl S-oxide,
 homothiomorpholinyl S,S-dioxide, pyrrolinyl and pyrrolidinyl where each group is
 optionally substituted with one, two, three, or four of $C_1-C_6 \text{ alkyl}$,
 25 (16) $-(CH_2)_{0-4}-CO-O-R_{N-5}$ where R_{N-5} is selected from the
 group consisting of:

(a) $C_1-C_6 \text{ alkyl}$,
 (b) $-(CH_2)_{0-2}-(R_{1\text{-aryl}})$ where $R_{1\text{-aryl}}$ is as defined
 above,
 30 (c) $C_2-C_6 \text{ alkenyl}$ containing one or two double
 bonds,
 (d) $C_2-C_6 \text{ alkynyl}$ containing one or two triple
 bonds,
 (e) $C_3-C_7 \text{ cycloalkyl}$, and

(f) $-(CH_2)_{0-2}-(R_{1-\text{heteroaryl}})$ where $R_{1-\text{heteroaryl}}$ is as defined above,

(17) $-(CH_2)_{0-4}-SO_2-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are as defined above,

5 (18) $-(CH_2)_{0-4}-SO-(C_1-C_8 \text{ alkyl})$,

(19) $-(CH_2)_{0-4}-SO_2-(C_1-C_{12} \text{ alkyl})$,

(20) $-(CH_2)_{0-4}-SO_2-(C_3-C_7 \text{ cycloalkyl})$,

(21) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-O-R_{N-5}$ where R_{N-5} can be the same or different and is as defined above,

10 (22) $-(CH_2)_{0-4}-N(H \text{ or } R_{N-5})-CO-N(R_{N-5})_2$, where R_{N-5} can be the same or different and is as defined above,

(23) $-(CH_2)_{0-4}-N-CS-N(R_{N-5})_2$, where R_{N-5} can be the same or different and is as defined above,

(24) $-(CH_2)_{0-4}-N(-H \text{ or } R_{N-5})-CO-R_{N-2}$ where R_{N-5} and R_{N-2} can be the same or different and are as defined above,

15 (25) $-(CH_2)_{0-4}-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} can be the same or different and are as defined above,

(26) $-(CH_2)_{0-4}-R_{N-4}$ where R_{N-4} is as defined above,

(27) $-(CH_2)_{0-4}-O-CO-(C_1-C_6 \text{ alkyl})$,

20 (28) $-(CH_2)_{0-4}-O-P(O)-(OR_{N-\text{aryl}-1})_2$ where $R_{N-\text{aryl}-1}$ is $-H$ or $C_1-C_4 \text{ alkyl}$,

(29) $-(CH_2)_{0-4}-O-CO-N(R_{N-5})_2$ where R_{N-5} is as defined above,

25 (30) $-(CH_2)_{0-4}-O-CS-N(R_{N-5})_2$ where R_{N-5} is as defined above,

(31) $-(CH_2)_{0-4}-O-(R_{N-5})_2$ where R_{N-5} is as defined above,

(32) $-(CH_2)_{0-4}-O-(R_{N-5})_2-COOH$ where R_{N-5} is as defined above,

30 (33) $-(CH_2)_{0-4}-S-(R_{N-5})_2$ where R_{N-5} is as defined above,

(34) $-(CH_2)_{0-4}-O-(C_1-C_6 \text{ alkyl})$ optionally substituted with one, two, three, four, or five of $-F$,

(35) $C_3-C_7 \text{ cycloalkyl}$,

(36) C₂-C₆ alkenyl with one or two double bonds optionally substituted with C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(37) C₂-C₆ alkynyl with one or two triple bonds optionally substituted with C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₃ alkoxy, or -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(38) -(CH₂)₀₋₄-N(-H or R_{N-5})-SO₂-R_{N-2} where R_{N-5} and R_{N-2} can be the same or different and are as defined above, or

(39) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl,

(C) R_{N-aryl}-W-R_{N-aryl}, where R_{N-aryl} can be the same or different,

(D) R_{N-aryl}-W-R_{N-heteroaryl},

(E) R_{N-aryl}-W-R_{N-1-heterocycle}, wherein R_{N-1-heterocycle} is the same as R_{1-heterocycle}, and R_{1-heterocycle} is as defined above

(F) R_{N-heteroaryl}-W-R_{N-aryl},

(G) R_{N-heteroaryl}-W-R_{N-heteroaryl},

(H) R_{N-heteroaryl}-W-R_{N-1-heterocycle},

(I) R_{N-heterocycle}-W-R_{N-aryl}, wherein R_{N-heterocycle} is the same as R_{1-heterocycle}, and R_{1-heterocycle} is as defined above, and R_{N-aryl} is as defined above,

(J) R_{N-heterocycle}-W-R_{N-heteroaryl}, and

(K) R_{N-heterocycle}-W-R_{N-1-heterocycle},

where W is

(29) -(CH₂)₀₋₄-,

(30) -O-,

(31) -S(O)₀₋₂-,

(32) -N(R_{N-5})- where R_{N-5} is as defined above, or

(5) -CO-;

(II) -CO-(C₁-C₁₀ alkyl) where alkyl is optionally substituted with one three substituents selected from the group consisting of:

(A) -OH,

(B) -C₁-C₆ alkoxy,

(C) -C₁-C₆ thioalkoxy,

(D) -CO-O-R_{N-8} where R_{N-8} is -H, C₁-C₆ alkyl or -phenyl,

(E) $-\text{CO}-\text{NR}_{\text{N}-2}\text{R}_{\text{N}-3}$ where $\text{R}_{\text{N}-2}$ and $\text{R}_{\text{N}-3}$ are the same or different and are as defined above,

(F) $-\text{CO}-\text{R}_{\text{N}-4}$ where $\text{R}_{\text{N}-4}$ is as defined above,

(G) $-\text{SO}_2-(\text{C}_1-\text{C}_8 \text{ alkyl})$,

5 (H) $-\text{SO}_2-\text{NR}_{\text{N}-2}\text{R}_{\text{N}-3}$ where $\text{R}_{\text{N}-2}$ and $\text{R}_{\text{N}-3}$ are the same or different and are as defined above,

(I) $-\text{NH}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

(J) $-\text{NH}-\text{CO}-\text{O}-\text{R}_{\text{N}-8}$ where $\text{R}_{\text{N}-8}$ is as defined above,

10 (K) $-\text{NR}_{\text{N}-2}\text{R}_{\text{N}-3}$ where $\text{R}_{\text{N}-2}$ and $\text{R}_{\text{N}-3}$ are the same or different and are as defined above,

(L) $-\text{R}_{\text{N}-4}$ where $\text{R}_{\text{N}-4}$ is as defined above,

(M) $-\text{O}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

(N) $-\text{O}-\text{CO}-\text{NR}_{\text{N}-8}\text{R}_{\text{N}-8}$ where $\text{R}_{\text{N}-8}$ are the same or different and are as defined above,

15 (O) $-\text{O}-(\text{C}_1-\text{C}_5 \text{ alkyl})-\text{COOH}$,

(P) $-\text{O}-(\text{C}_1-\text{C}_6 \text{ alkyl})$ optionally substituted with one, two, or three of -F, -Cl, -Br, or -I),

(Q) $-\text{NH}-\text{SO}_2-(\text{C}_1-\text{C}_6 \text{ alkyl})$, and

(R) -F, or -Cl,

20 (III) $-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})-\text{O}-(\text{C}_1-\text{C}_6 \text{ alkyl})$ where alkyl is optionally substituted with one, two, or three substituents selected from the group consisting of:

(A) -OH,

(B) $-\text{C}_1-\text{C}_6$ alkoxy,

(C) $-\text{C}_1-\text{C}_6$ thioalkoxy,

25 (D) $-\text{CO}-\text{O}-\text{R}_{\text{N}-8}$ where $\text{R}_{\text{N}-8}$ is -H, C_1-C_6 alkyl or -phenyl,

(E) $-\text{CO}-\text{NR}_{\text{N}-2}\text{R}_{\text{N}-3}$ where $\text{R}_{\text{N}-2}$ and $\text{R}_{\text{N}-3}$ are the same or different and are as defined above,

(F) $-\text{CO}-\text{R}_{\text{N}-4}$ where $\text{R}_{\text{N}-4}$ is as defined above,

(G) $-\text{SO}_2-(\text{C}_1-\text{C}_8 \text{ alkyl})$,

30 (H) $-\text{SO}_2-\text{NR}_{\text{N}-2}\text{R}_{\text{N}-3}$ where $\text{R}_{\text{N}-2}$ and $\text{R}_{\text{N}-3}$ are the same or different and are as defined above,

(I) $-\text{NH}-\text{CO}-(\text{C}_1-\text{C}_6 \text{ alkyl})$,

(J) $-\text{NH}-\text{CO}-\text{O}-\text{R}_{\text{N}-8}$ where $\text{R}_{\text{N}-8}$ is as defined above,

(K) $-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(L) $-R_{N-4}$ where R_{N-4} is as defined above,

(M) $-O-CO-(C_1-C_6 \text{ alkyl})$,

5 (N) $-O-CO-NR_{N-8}R_{N-8}$ where R_{N-8} are the same or different and are as defined above,

(O) $-O-(C_1-C_5 \text{ alkyl})-COOH$,

(P) $-O-(C_1-C_6 \text{ alkyl})$ optionally substituted with one, two, or three of -F, -Cl, -Br, or -I),

10 (Q) $-NH-SO_2-(C_1-C_6 \text{ alkyl})$, and

(R) -F, or -Cl,

(IV) $-CO-(C_1-C_6 \text{ alkyl})-S-(C_1-C_6 \text{ alkyl})$ where alkyl is optionally substituted with one, two, or three of substituents selected from the group consisting of:

(A) -OH,

15 (B) $-C_1-C_6 \text{ alkoxy}$,

(C) $-C_1-C_6 \text{ thioalkoxy}$,

(D) $-CO-O-R_{N-8}$ where R_{N-8} is as defined above,

(E) $-CO-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

20 (F) $-CO-R_{N-4}$ where R_{N-4} is as defined above,

(G) $-SO_2-(C_1-C_8 \text{ alkyl})$,

(H) $-SO_2-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(I) $-NH-CO-(C_1-C_6 \text{ alkyl})$,

25 (J) $-NH-CO-O-R_{N-8}$ where R_{N-8} is as defined above,

(K) $-NR_{N-2}R_{N-3}$ where R_{N-2} and R_{N-3} are the same or different and are as defined above,

(L) $-R_{N-4}$ where R_{N-4} is as defined above,

(M) $-O-CO-(C_1-C_6 \text{ alkyl})$,

30 (N) $-O-CO-NR_{N-8}R_{N-8}$ where R_{N-8} are the same or different and are as defined above,

(O) $-O-(C_1-C_5 \text{ alkyl})-COOH$,

(P) $-\text{O}-(\text{C}_1\text{-C}_6 \text{ alkyl optionally substituted with one, two, or three of } -\text{F}, -\text{Cl}, -\text{Br}, \text{ or } -\text{I}),$

(Q) $-\text{NH}-\text{SO}_2-(\text{C}_1\text{-C}_6 \text{ alkyl}),$ and

(R) $-\text{F},$ or $-\text{Cl},$

5 (V) $-\text{CO}-\text{CH}((\text{CH}_2)_{0-2}-\text{O}-\text{R}_{\text{N-10}})-(\text{CH}_2)_{0-2}-\text{R}_{\text{N-aryl}}/\text{R}_{\text{N-heteroaryl}}$ where $\text{R}_{\text{N-aryl}}$ and $\text{R}_{\text{N-heteroaryl}}$ are as defined above, where $\text{R}_{\text{N-10}}$ is selected from the group consisting of:

(A) $-\text{H},$

(B) $\text{C}_1\text{-C}_6 \text{ alkyl},$

(C) $\text{C}_3\text{-C}_7 \text{ cycloalkyl},$

10 (D) $\text{C}_2\text{-C}_6 \text{ alkenyl with one double bond},$

(E) $\text{C}_2\text{-C}_6 \text{ alkynyl with one triple bond},$

(F) $\text{R}_{\text{I-aryl}}$ where $\text{R}_{\text{I-aryl}}$ is as defined above, and

(G) $\text{R}_{\text{N-heteroaryl}}$ where $\text{R}_{\text{N-heteroaryl}}$ is as defined above, or

(VI) $-\text{CO}-(\text{C}_3\text{-C}_8 \text{ cycloalkyl})$ where alkyl is optionally substituted with one
15 or two substituents selected from the group consisting of:

(A) $-(\text{CH}_2)_{0-4}-\text{OH},$

(B) $-(\text{CH}_2)_{0-4}-\text{C}_1\text{-C}_6 \text{ alkoxy},$

(C) $-(\text{CH}_2)_{0-4}-\text{C}_1\text{-C}_6 \text{ thioalkoxy},$

(D) $-(\text{CH}_2)_{0-4}-\text{CO}-\text{O}-\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is $-\text{H}, \text{C}_1\text{-C}_6 \text{ alkyl}$ or $\text{phenyl},$

20 (E) $-(\text{CH}_2)_{0-4}-\text{CO}-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

(F) $-(\text{CH}_2)_{0-4}-\text{CO}-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(G) $-(\text{CH}_2)_{0-4}-\text{SO}_2-(\text{C}_1\text{-C}_8 \text{ alkyl}),$

(H) $-(\text{CH}_2)_{0-4}-\text{SO}_2-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or
25 different and are as defined above,

(I) $-(\text{CH}_2)_{0-4}-\text{NH}-\text{CO}-(\text{C}_1\text{-C}_6 \text{ alkyl}),$

(J) $-\text{NH}-\text{CO}-\text{O}-\text{R}_{\text{N-8}}$ where $\text{R}_{\text{N-8}}$ is as defined above,

(K) $-(\text{CH}_2)_{0-4}-\text{NR}_{\text{N-2}}\text{R}_{\text{N-3}}$ where $\text{R}_{\text{N-2}}$ and $\text{R}_{\text{N-3}}$ are the same or different and are as defined above,

30 (L) $-(\text{CH}_2)_{0-4}-\text{R}_{\text{N-4}}$ where $\text{R}_{\text{N-4}}$ is as defined above,

(M) $-\text{O}-\text{CO}-(\text{C}_1\text{-C}_6 \text{ alkyl}),$

(N) -O-CO-NR_{N-8}R_{N-8} where R_{N-8} are the same or different and are as defined above,

(O) -O-(C₁-C₅ alkyl)-COOH,

(P) -O-(C₁-C₆ alkyl optionally substituted with one, two, or three of
5 -F, -Cl, -Br, or -I),

(Q) -NH-SO₂-(C₁-C₆ alkyl), and

(R) -F, or -Cl;

where R_A is:

10 (I) -C₁-C₁₀ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, -OC=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, -S(=O)₀₋₂ R_{1-a} where R_{1-a} is as defined above, -NR_{1-a}C=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, -
15 C=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, and -S(=O)₂ NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(II) -(CH₂)₀₋₃-(C₃-C₈) cycloalkyl where cycloalkyl can be optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -CO-OH, -CO-
20 O-(C₁-C₄ alkyl), and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(III) -(CR_{A-x}R_{A-y})₀₋₄-R_{A-aryl} where R_{A-x} and R_{A-y} are

(A) -H,

(B) C₁-C₄ alkyl optionally substituted with one or two -OH,

(C) C₁-C₄ alkoxy optionally substituted with one, two, or three of -
25 F,

(D) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl,

(E) C₂-C₆ alkenyl containing one or two double bonds,

(F) C₂-C₆ alkynyl containing one or two triple bonds, or

(G) phenyl,

30 and where R_{A-x} and R_{A-y} are taken together with the carbon to which they are attached to form a carbocycle of three, four, five, six or seven carbon atoms, optionally where one carbon atom is replaced by a heteroatom selected from the group consisting of -O-, -S-, -SO₂-, and -NR_{N-2}- and R_{A-aryl} is the same as R_{N-aryl},

(IV) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}}$ where $\text{R}_{\text{A-heteroaryl}}$ is the same as $\text{R}_{\text{N-heteroaryl}}$ and $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(V) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-aryl}}-\text{R}_{\text{A-aryl}}$ where $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

5 (VI) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-aryl}}-\text{R}_{\text{A-heteroaryl}}$ where $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(VII) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}}-\text{R}_{\text{A-aryl}}$ where $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

10 (VIII) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}}-\text{R}_{\text{A-heteroaryl}}$ where $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(IX) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-aryl}}-\text{R}_{\text{A-heterocycle}}$ where $\text{R}_{\text{A-heterocycle}}$ is defined as $\text{R}_{\text{1-heterocycle}}$, and where $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(X) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heteroaryl}}-\text{R}_{\text{A-heterocycle}}$ where $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

15 (XI) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}}-\text{R}_{\text{A-aryl}}$ where $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-aryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(XII) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}}-\text{R}_{\text{A-heteroaryl}}$ where $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-heteroaryl}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

20 (XIII) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}}-\text{R}_{\text{A-heterocycle}}$ where $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(XIV) $-(\text{CR}_{\text{A-x}}\text{R}_{\text{A-y}})_{0-4}-\text{R}_{\text{A-heterocycle}}$ where $\text{R}_{\text{A-heterocycle}}$, $\text{R}_{\text{A-x}}$ and $\text{R}_{\text{A-y}}$ are as defined above,

(XV) $-[\text{C}(\text{R}_{\text{A-1}})(\text{R}_{\text{A-2}})]_{1-3}-\text{CO}-\text{N}(\text{R}_{\text{A-3}})_2$ where $\text{R}_{\text{A-1}}$ and $\text{R}_{\text{A-2}}$ are the same or different and are selected from the group consisting of:

25 (A) -H,

(B) $\text{C}_1\text{-C}_6$ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $\text{-NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

30 (C) $\text{C}_2\text{-C}_6$ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $\text{-NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(D) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

5 (E) -(CH₂)₁₋₂-S(O)₀₋₂-(C₁-C₆ alkyl),

(F) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

10 (G) -(C₁-C₄ alkyl)-R_{A'-aryl} where R_{A'-aryl} is as defined for R_{1-aryl},

(H) -(C₁-C₄ alkyl)-R_{A-heteroaryl} where R_{A-heteroaryl} is as defined above,

(I) -(C₁-C₄ alkyl)-R_{A-heterocycle} where R_{A-heterocycle} is as defined above,

(J) -R_{A-heteroaryl} where R_{A-heteroaryl} is as defined above,

(K) -R_{A-heterocycle} where R_{A-heterocycle} is as defined above,

15 (M) -(CH₂)₁₋₄-R_{A-4}-(CH₂)₀₋₄-R_{A'-aryl} where R_{A-4} is -O-, -S- or -NR_{A-5}- where R_{A-5} is C₁-C₆ alkyl, and where R_{A'-aryl} is defined above,

(N) -(CH₂)₁₋₄-R_{A-4}-(CH₂)₀₋₄-R_{A-heteroaryl} where R_{A-4} and R_{A-heteroaryl} are as defined above, and

(O) -R_{A'-aryl} where R_{A'-aryl} is as defined above,

20 and where R_{A-3} is the same or different and is:

(A) -H,

(B) -C₁-C₆ alkyl optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined
25 above,

(C) C₂-C₆ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

30 (D) C₂-C₆ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(E) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

5 (F) $-R_{A'-aryl}$ where $R_{A'-aryl}$ is as defined above,

(G) $-R_{A-heteroaryl}$ where $R_{A-heteroaryl}$ is as defined above,

(H) $-R_{A-heterocycle}$ where $R_{A-heterocycle}$ is as defined above,

(I) $-(C_1-C_4 \text{ alkyl})-R_{A'-aryl}$ where $R_{A'-aryl}$ is as defined above,

(J) $-(C_1-C_4 \text{ alkyl})-R_{A-heteroaryl}$ where $R_{A-heteroaryl}$ is as defined above,

10 (K) $-(C_1-C_4 \text{ alkyl})-R_{A-heterocycle}$ where $R_{A-heterocycle}$ is as defined above, or

(XVI) $-\text{CH}(R_{A-aryl})_2$ where R_{A-aryl} are the same or different and are as defined above,

(XVII) $-\text{CH}(R_{A-heteroaryl})_2$ where $R_{A-heteroaryl}$ are the same or different and are as defined above,

(XVIII) $-\text{CH}(R_{A-aryl})(R_{A-heteroaryl})$ where R_{A-aryl} and $R_{A-heteroaryl}$ are as defined above,

(XIX) $-\text{cyclopentyl}$, $-\text{cyclohexyl}$, or $-\text{cycloheptyl}$ ring fused to R_{A-aryl} , $R_{A-heteroaryl}$, $R_{A-heterocycle}$ where R_{A-aryl} or $R_{A-heteroaryl}$ or $R_{A-heterocycle}$ are as defined above where one carbon of cyclopentyl, cyclohexyl, or $-\text{cycloheptyl}$ is optionally replaced with NH , NR_{N-5} , O , or $S(=O)_{0-2}$, and where cyclopentyl, cyclohexyl, or $-\text{cycloheptyl}$ can be optionally substituted with one or two $-C_1-C_3$ alkyl, $-F$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $=O$, or $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(XX) C_2-C_{10} alkenyl containing one or two double bonds optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(XXI) C_2-C_{10} alkynyl containing one or two triple bonds optionally substituted with one, two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(XXI) $-(CH_2)_{0-1}-CHR_{A-6}-(CH_2)_{0-1}-R_{A-aryl}$ where R_{A-aryl} is as defined above and R_{A-6} is $-(CH_2)_{0-6}-OH$,

(XXII) $-(CH_2)_{0-1}-CHR_{A-6}-(CH_2)_{0-1}-R_{A-heteroaryl}$ where $R_{A-heteroaryl}$ and R_{A-6} is as defined above,

(XXIII) $-CH(-R_{A-aryl} \text{ or } R_{A-heteroaryl})-CO-O(C_1-C_4 \text{ alkyl})$ where R_{A-aryl} and $R_{A-heteroaryl}$ are as defined above,

5 (XXIV) $-CH(-CH_2-OH)-CH(-OH)-micro-NO_2$,

(XXV) $(C_1-C_6 \text{ alkyl})-O-(C_1-C_6 \text{ alkyl})-OH$,

(XXVII) $-CH_2-NH-CH_2-CH(-O-CH_2-CH_3)_2$,

(XXVIII) $-H$,

10 (XXIX) $-(CH_2)_{0-6}-C(=NR_{1-a})(NR_{1-a}R_{1-b})$ where R_{1-a} and R_{1-b} are as defined above; or

(XXX)

$-C=OC(HR_6)NHR_7$, where R_6 and R_7 are as defined below,

$-C=OR_7$, where R_7 is as defined below,

15 $-C=OOR_7$, where R_7 is as defined below, or

$-SOOR_7$ where R_7 is as defined below,

wherein R_6 is:

hydrogen,

$C_1 - C_3$ alkyl,

phenyl,

20 thioalkoxyalkyl,

alkyl substituted aryl,

cycloalkyl,

cycloalkylalkyl,

hydroxyalkyl,

25 alkoxyalkyl,

aryloxyalkyl,

haloalkyl,

carboxyalkyl,

alkoxycarbonylalkyl,

30 aminoalkyl,

(N-protected)aminoalkyl,

alkylaminoalkyl,

((N-protected)(alkyl)amino)alkyl,

dialkylaminoalkyl,

5 guanidinoalkyl,
 lower alkenyl,
 heterocyclic,
 (heterocyclic)alkyl),
 10 arylthioalkyl,
 arylsulfonyalkyl,
 (heterocyclic)thioalkyl,
 (heterocyclic)sulfonylalkyl,
 (heterocyclic)oxyalkyl,
 15 arylalkoxyalkyl,
 arylthioalkoxyalkyl,
 arylalkylsulfonylalkyl,
 (heterocyclic)alkoxyalkyl,
 (heterocyclic)thioalkoxyalkyl,
 (heterocyclic)alkylsulfonylalkyl,
 cycloalkyloxyalkyl,
 cycloalkylthioalkyl,
 cycloalkylsulfonylalkyl,
 cycloalkylalkoxyalkyl,
 20 cycloalkylthioalkoxyalkyl,
 cycloalkylalkylsulfonylalkyl,
 aminocarbonyl,
 alkylaminocarbonyl,
 dialkylaminocarbonyl,
 25 aroylalkyl,
 (heterocyclic)carbonylalkyl,
 polyhydroxyalkyl,
 aminocarbonylalkyl,
 alkylaminocarbonylalkyl,
 30 dialkylaminocarbonylalkyl,
 aryloxyalkyl, or
 alkylsulfonylalkyl,

wherein heterocyclic is pyridyl, thiazolyl, isothiazolyl,
 oxazolyl, isoxazolyl, furanyl, thienyl, tetrahydrofuranyl, tetrahydrothienyl and

tetrahydro[2H]pyranyl and wherein the heterocycle is unsubstituted or substituted with one to three substituents independently selected from hydroxy, halo, amino, alkylamino, dialkylamino, alkoxy, polyalkoxy, haloalkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, COOH, -SO₃H, lower alkenyl or lower alkyl;

5

wherein R₇ is:

10

C₁ - C₃ alkyl,
phenyl,
thioalkoxyalkyl,

(aryl)alkyl,
cycloalkyl,
cycloalkylalkyl,

hydroxyalkyl,
alkoxyalkyl,

15

aryloxyalkyl,

haloalkyl,

carboxyalkyl,

alkoxycarbonylalkyl,

aminoalkyl,

20

(N-protected)aminocalkyl,

alkylaminoalkyl,

((N-protected)(alkyl)amino)alkyl,

dialkylaminoalkyl,

guanidinoalkyl,

lower alkenyl,

25

heterocyclic,

(heterocyclic)alkyl),

arylthioalkyl,

arylsulfonyalkyl,

(heterocyclic)thioalkyl,

30

(heterocyclic)sulfonylalkyl,

(heterocyclic)oxyalkyl,

arylalkoxyalkyl,

arylthioalkoxyalkyl,

arylalkylsulfonylalkyl,

(heterocyclic))alkoxyalkyl,
 (heterocyclic)thioalkoxyalkyl,
 (heterocyclic)alkylsulfonylalkyl,
 cycloalkyloxyalkyl,
 5 cycloalkylthioalkyl,
 cycloalkylsulfonylalkyl,
 cycloalkylalkoxyalkyl,
 cycloalkylthioalkoxyalkyl,
 cycloalkylalkylsulfonylalkyl,
 10 aminocarbonyl,
 alkylaminocarbonyl,
 dialkylaminocarbonyl,
 aroylalkyl,
 (heterocyclic)carbonylalkyl,
 15 polyhydroxyalkyl,
 aminocarbonylalkyl,
 alkylaminocarbonylalkyl,
 dialkylaminocarbonylalkyl,
 aryloxyalkyl, or
 20 alkylsulfonylalkyl,

wherein heterocyclic is pyridyl, thiazolyl, isothiazolyl,
 oxazolyl, isoxazolyl, furanyl, thienyl, tetrahydrofuranyl, tetrahydrothienyl and
 tetrahydro[2H]pyranyl and wherein the heterocycle is unsubstituted or substituted with
 one to three substituents independently selected from hydroxy, halo, amino, alkylamino,
 25 dialkylamino, alkoxy, polyalkoxy, haloalkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl,
 COOH, -SO₃H, lower alkenyl or lower alkyl;

where X is -N, or -O, with the proviso that when X is O, R_B is absent;

and when X is N,

R_B is:

30 (I)-C₁-C₁₀ alkyl optionally substituted with one, two or three substituents
 selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH,

-SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, -OC=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, -S(=O)₀₋₂ R_{1-a} where R_{1-a} is as defined above, -NR_{1-a}C=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, -C=O NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above, and -S(=O)₂ NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(II) -(CH₂)₀₋₃-(C₃-C₈) cycloalkyl where cycloalkyl can be optionally substituted with one, two or three substituents selected from the group consisting of C₁-C₃ alkyl, -F, -Cl, -Br, -I, -OH, -SH, -C≡N, -CF₃, C₁-C₆ alkoxy, -O-phenyl, -CO-OH, -CO-O-(C₁-C₄ alkyl), and -NR_{1-a}R_{1-b} where R_{1-a} and R_{1-b} are as defined above,

(III) -(CR_{B-x}R_{B-y})₀₋₄-R_{B-aryl} where R_{B-x} and R_{B-y} are

(A) -H,

(B) C₁-C₄ alkyl optionally substituted with one or two -OH,

(C) C₁-C₄ alkoxy optionally substituted with one, two, or three of -F,

(D) -(CH₂)₀₋₄-C₃-C₇ cycloalkyl,

(E) C₂-C₆ alkenyl containing one or two double bonds,

(F) C₂-C₆ alkynyl containing one or two triple bonds, or

(G) phenyl,

and where R_{B-x} and R_{B-y} are taken together with the carbon to which they are attached to form a carbocycle of three, four, five, six or seven carbon atoms, optionally where one carbon atom is replaced by a heteroatom selected from the group consisting of -O-, -S-, -SO₂-, and -NR_{N-2} where R_{N-2} is as defined above, and R_{B-aryl} is the same as R_{N-aryl} and is defined above

(IV) -(CR_{B-x}R_{B-y})₀₋₄-R_{B-heteroaryl} where R_{B-heteroaryl} is the same as R_{N-heteroaryl}, R_{B-x}, and R_{B-y} are as defined above,

(V) -(CR_{B-x}R_{B-y})₀₋₄-R_{B-aryl}-R_{B-aryl} where R_{B-aryl}, R_{B-x}, and R_{B-y} are as defined above,

(VI) -(CR_{B-x}R_{B-y})₀₋₄-R_{B-aryl}-R_{B-heteroaryl} where R_{B-aryl}, R_{B-heteroaryl}, R_{B-x} and R_{B-y} are as defined above,

(VII) -(CR_{B-x}R_{B-y})₀₋₄-R_{B-heteroaryl}-R_{B-aryl} where R_{B-heteroaryl}, R_{B-aryl}, R_{B-x} and R_{B-y} are as defined above,

(VIII) -(CR_{B-x}R_{B-y})₀₋₄-R_{B-heteroaryl}-R_{B-heteroaryl} where R_{B-heteroaryl}, R_{B-x} and R_{B-y} are as defined above,

(IX) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-aryl}}-\text{R}_{\text{B-heterocycle}}$ where $\text{R}_{\text{B-heterocycle}}$ is defined as $\text{R}_{\text{L-heterocycle}}$, and where $\text{R}_{\text{B-aryl}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

(X) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heteroaryl}}-\text{R}_{\text{B-heterocycle}}$ where $\text{R}_{\text{B-heteroaryl}}$, $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

5 (XI) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heterocycle}}-\text{R}_{\text{B-aryl}}$ where $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-aryl}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

(XII) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heterocycle}}-\text{R}_{\text{B-heteroaryl}}$ where $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-heteroaryl}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

10 (XIII) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heterocycle}}-\text{R}_{\text{B-heterocycle}}$ where $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

(XIV) $-(\text{CR}_{\text{B-x}}\text{R}_{\text{B-y}})_{0-4}-\text{R}_{\text{B-heterocycle}}$ where $\text{R}_{\text{B-heterocycle}}$, $\text{R}_{\text{B-x}}$ and $\text{R}_{\text{B-y}}$ are as defined above,

(XV) $-[\text{C}(\text{R}_{\text{B-1}})(\text{R}_{\text{B-2}})]_{1-3}-\text{CO}-\text{N}(\text{R}_{\text{B-3}})_2$ where $\text{R}_{\text{B-1}}$ and $\text{R}_{\text{B-2}}$ are the same or different and are selected from the group consisting of:

15 (A) -H,

(B) $\text{C}_1\text{-C}_6$ alkyl, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $\text{-NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

20 (C) $\text{C}_2\text{-C}_6$ alkenyl with one or two double bonds, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $\text{-NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

25 (D) $\text{C}_2\text{-C}_6$ alkynyl with one or two triple bonds, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $\text{-NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(E) $-(\text{CH}_2)_{1-2}-\text{S}(\text{O})_{0-2}-(\text{C}_1\text{-C}_6 \text{ alkyl})$,

30 (F) $-(\text{CH}_2)_{0-4}-\text{C}_3\text{-C}_7$ cycloalkyl, optionally substituted with one, two or three substituents selected from the group consisting of $\text{C}_1\text{-C}_3$ alkyl, -F, -Cl, -Br, -I, -OH, -SH, $\text{-C}\equiv\text{N}$, -CF_3 , $\text{C}_1\text{-C}_6$ alkoxy, -O-phenyl, and $\text{-NR}_{1-a}\text{R}_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(G) $-(C_1-C_4 \text{ alkyl})-R_{B'\text{-aryl}}$ where $R_{B'\text{-aryl}}$ is as defined above for R_1 ,
aryl,

(H) $-(C_1-C_4 \text{ alkyl})-R_{B\text{-heteroaryl}}$ where $R_{B\text{-heteroaryl}}$ is as defined above,

(I) $-(C_1-C_4 \text{ alkyl})-R_{B\text{-heterocycle}}$ where $R_{B\text{-heterocycle}}$ is as defined above,

5 (J) $-R_{B\text{-heteroaryl}}$ where $R_{B\text{-heteroaryl}}$ is as defined above,

(K) $-R_{B\text{-heterocycle}}$ where $R_{B\text{-heterocycle}}$ is as defined above,

(M) $-(CH_2)_{1-4}-R_{B-4}-(CH_2)_{0-4}-R_{B'\text{-aryl}}$ where R_{B-4} is $-O-$, $-S-$ or
 $-NR_{B-5}-$ where R_{B-5} is C_1-C_6 alkyl, and where $R_{B'\text{-aryl}}$ is defined above,

(N) $-(CH_2)_{1-4}-R_{B-4}-(CH_2)_{0-4}-R_{B\text{-heteroaryl}}$ where R_{B-4} and $R_{B\text{-heteroaryl}}$
10 are as defined above, and

(O) $-R_{B'\text{-aryl}}$ where $R_{B'\text{-aryl}}$ is as defined above,

and where R_{B-3} is the same or different and is:

(A) $-H$,

(B) $-C_1-C_6$ alkyl optionally substituted with one, two or three
15 substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$,
 $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as
defined above,

(C) C_2-C_6 alkenyl with one or two double bonds, optionally
substituted with one, two or three substituents selected from the group consisting of C_1-C_3
20 alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$
where R_{1-a} and R_{1-b} are as defined above,

(D) C_2-C_6 alkynyl with one or two triple bonds, optionally
substituted with one, two or three substituents selected from the group consisting of C_1-C_3
alkyl, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$
25 where R_{1-a} and R_{1-b} are as defined above,

(E) $-(CH_2)_{0-4}-C_3-C_7$ cycloalkyl, optionally substituted with one,
two or three substituents selected from the group consisting of C_1-C_3 alkyl, $-F$, $-Cl$, $-Br$, $-I$,
 $-OH$, $-SH$, $-C\equiv N$, $-CF_3$, C_1-C_6 alkoxy, $-O$ -phenyl, and $-NR_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are
as defined above,

30 (F) $-R_{B'\text{-aryl}}$ where $R_{B'\text{-aryl}}$ is as defined above,

(G) $-R_{B\text{-heteroaryl}}$ where $R_{B\text{-heteroaryl}}$ is as defined above,

(H) $-R_{B\text{-heterocycle}}$ where $R_{B\text{-heterocycle}}$ is as defined above,

(I) $-(C_1-C_4 \text{ alkyl})-R_{B'\text{-aryl}}$ where $R_{B'\text{-aryl}}$ is as defined above,

(J) $-(C_1-C_4 \text{ alkyl})-R_{B\text{-heteroaryl}}$ where $R_{B\text{-heteroaryl}}$ is as defined above,

(K) $-(C_1-C_4 \text{ alkyl})-R_{B\text{-heterocycle}}$ where $R_{B\text{-heterocycle}}$ is as defined

above, or

(XVI) $-\text{CH}(R_{B\text{-aryl}})_2$ where $R_{B\text{-aryl}}$ are the same or different and are as
5 defined above,

(XVII) $-\text{CH}(R_{B\text{-heteroaryl}})_2$ where $R_{B\text{-heteroaryl}}$ are the same or different and are
as defined above,

(XVIII) $-\text{CH}(R_{B\text{-aryl}})(R_{B\text{-heteroaryl}})$ where $R_{B\text{-aryl}}$ and $R_{B\text{-heteroaryl}}$ are as
defined above,

10 (XIX) -cyclopentyl, -cyclohexyl, or -cycloheptyl ring fused to $R_{B\text{-aryl}}$ or $R_{B\text{-heteroaryl}}$ or $R_{B\text{-heterocycle}}$ where $R_{B\text{-aryl}}$ or $R_{B\text{-heteroaryl}}$ or $R_{B\text{-heterocycle}}$ are as defined above where
one carbon of cyclopentyl, cyclohexyl, or -cycloheptyl is optionally replaced with NH ,
 NR_{N-5} , O , or $\text{S}(=\text{O})_{0-2}$, and where cyclopentyl, cyclohexyl, or -cycloheptyl can be
optionally substituted with one or two $-C_1-C_3$ alkyl, $-\text{F}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_6
15 alkoxy, $=\text{O}$, or $-\text{NR}_{1-a}R_{1-b}$ where R_{1-a} and R_{1-b} are as defined above,

(XX) C_2-C_{10} alkenyl containing one or two double bonds optionally
substituted with one, two or three substituents selected from the group consisting of C_1-C_3
alkyl, $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_6 alkoxy, $-\text{O-phenyl}$, and $-\text{NR}_{1-a}R_{1-b}$
where R_{1-a} and R_{1-b} are as defined above,

20 (XXI) C_2-C_{10} alkynyl containing one or two triple bonds optionally
substituted with one, two or three substituents selected from the group consisting of C_1-C_3
alkyl, $-\text{F}$, $-\text{Cl}$, $-\text{Br}$, $-\text{I}$, $-\text{OH}$, $-\text{SH}$, $-\text{C}\equiv\text{N}$, $-\text{CF}_3$, C_1-C_6 alkoxy, $-\text{O-phenyl}$, and $-\text{NR}_{1-a}R_{1-b}$
where R_{1-a} and R_{1-b} are as defined above,

(XXI) $-(\text{CH}_2)_{0-1}-\text{CHR}_{C-6}-(\text{CH}_2)_{0-1}-R_{B\text{-aryl}}$ where $R_{B\text{-aryl}}$ is as defined above
25 and R_{C-6} is $-(\text{CH}_2)_{0-6}-\text{OH}$,

(XXII) $-(\text{CH}_2)_{0-1}-\text{CHR}_{B-6}-(\text{CH}_2)_{0-1}-R_{B\text{-heteroaryl}}$ where $R_{B\text{-heteroaryl}}$ and R_{C-6} is
as defined above,

(XXIII) $-\text{CH}(-R_{B\text{-aryl}} \text{ or } R_{B\text{-heteroaryl}})-\text{CO}-\text{O}(C_1-C_4 \text{ alkyl})$ where $R_{B\text{-aryl}}$ and
 $R_{B\text{-heteroaryl}}$ are as defined above,

30 (XXIV) $-\text{CH}(-\text{CH}_2-\text{OH})-\text{CH}(-\text{OH})-\text{micro-NO}_2$,

(XXV) $(C_1-C_6 \text{ alkyl})-\text{O}-(C_1-C_6 \text{ alkyl})-\text{OH}$,

(XXVII) $-\text{CH}_2-\text{NH}-\text{CH}_2-\text{CH}(-\text{O}-\text{CH}_2-\text{CH}_3)_2$,

(XXVIII) $-\text{H}$, or

(XXIX) $-(\text{CH}_2)_{0-6}-\text{C}(=\text{NR}_{1-a})(\text{NR}_{1-a}\text{R}_{1-b})$ where R_{1-a} and R_{1-b} are as defined above.

96. A method of treatment according to claim 95,

5 where R_1 is:

$-(\text{CH}_2)_{0-1}-(\text{R}_{1-\text{aryl}})$, or

$-(\text{CH}_2)_{n1}-(\text{R}_{1-\text{heteroaryl}})$;

where R_N is:

$\text{R}_{N-1}-\text{X}_N$ -, where X_N is selected from the group consisting of:

10 $-\text{CO}-$, and

$-\text{SO}_2-$,

where R_{N-1} is selected from the group consisting of:

$-\text{R}_{N-\text{aryl}}$, and

$-\text{R}_{N-\text{heteroaryl}}$, or

15 $-\text{CO}-\text{CH}((\text{CH}_2)_{0-2}-\text{O}-\text{R}_{N-10})-(\text{CH}_2)_{0-2}-\text{R}_{N-\text{aryl}}/\text{R}_{N-\text{heteroaryl}})$;

where R_A is:

$-\text{C}_1-\text{C}_8$ alkyl,

$-(\text{CH}_2)_{0-3}-(\text{C}_3-\text{C}_7)$ cycloalkyl,

$-(\text{CR}_{A-x}\text{R}_{A-y})_{0-4}-\text{R}_{A-\text{aryl}}$,

20 $-(\text{CR}_{A-x}\text{R}_{A-y})_{0-4}-\text{R}_{A-\text{heteroaryl}}$,

$-(\text{CR}_{A-x}\text{R}_{A-y})_{0-4}-\text{R}_{A-\text{heterocycle}}$,

-cyclopentyl or -cyclohexyl ring fused to $\text{R}_{A-\text{aryl}}$ or $\text{R}_{A-\text{heteroaryl}}$ or R_{A-}

heterocycle;

where X is -N or -O, with the proviso that when X is O, R_B is absent;

25 and when X is N,

R_B is:

$-\text{C}_1-\text{C}_8$ alkyl,

$-(\text{CH}_2)_{0-3}-(\text{C}_3-\text{C}_7)$ cycloalkyl,

$-(\text{CR}_{A-x}\text{R}_{A-y})_{0-4}-\text{R}_{A-\text{aryl}}$,

30 $-(\text{CR}_{A-x}\text{R}_{A-y})_{0-4}-\text{R}_{A-\text{heteroaryl}}$,

$-(\text{CR}_{A-x}\text{R}_{A-y})_{0-4}-\text{R}_{A-\text{heterocycle}}$,

-cyclopentyl or -cyclohexyl ring fused to $\text{R}_{A-\text{aryl}}$ or $\text{R}_{A-\text{heteroaryl}}$ or R_{A-}

heterocycle.

97. A method of treatment according to claim 96, ✓

where R_1 is:

$-(CH_2)-(R_{1-aryl})$, or

$-(CH_2)-(R_{1-heteroaryl})$;

5 where R_2 is $-H$;

where R_3 is $-H$;

where R_N is:

$R_{N-1}-X_N$ - where X_N is:

$-CO-$,

10 where R_{N-1} is selected from the group consisting of:

$-R_{N-aryl}$, and

$-R_{N-heteroaryl}$;

where R_A is:

$-C_1-C_8$ alkyl,

15 $-(CH_2)_{0-3}-(C_3-C_7)$ cycloalkyl,

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-aryl}$,

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heteroaryl}$,

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heterocycle}$,

20 $-cyclopentyl$ or $-cyclohexyl$ ring fused to R_{A-aryl} or $R_{A-heteroaryl}$ or $R_{A-heterocycle}$;

where X is $-N$ or $-O$, with the proviso that when X is O , R_B is absent;

and when X is N ,

R_B is:

$-C_1-C_8$ alkyl,

25 $-(CH_2)_{0-3}-(C_3-C_7)$ cycloalkyl,

$-(CR_{B-x}R_{B-y})_{0-4}-R_{B-aryl}$,

$-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heteroaryl}$,

$-(CR_{B-x}R_{B-y})_{0-4}-R_{B-heterocycle}$,

30 $-cyclopentyl$ or $-cyclohexyl$ ring fused to R_{B-aryl} or $R_{B-heteroaryl}$ or $R_{B-heterocycle}$.

98. A method of treatment according to claim 97 ✓

where R_A is:

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-aryl}$,

-(CR_{A-x}R_{A-y})₀₋₄-R_{A-heteroaryl}, or

-cyclopentyl or -cyclohexyl ring fused to a R_{A-aryl} or R_{A-heteroaryl} or R_{A-heterocycle}; and

where R_B is:

5

-(CR_{B-x}R_{B-y})₀₋₄-R_{B-aryl},

-(CR_{B-x}R_{B-y})₀₋₄-R_{B-heteroaryl}, or

-cyclopentyl or -cyclohexyl ring fused to R_{B-aryl} or R_{B-heteroaryl} or R_{B-heterocycle}.

10 99. A method of treatment according to claim 95 where R₁ is

-(CH₂)-(R_{1-aryl}) where R_{1-aryl} is phenyl.

100. A method of treatment according to claim 95, where R₁ is

-(CH₂)-(R_{1-aryl}) where R_{1-aryl} is phenyl substituted with two -F.

15

101. A method of treatment according to claim 100 where the -F substitutions are at the 3- and 5- positions.

102. A method of treatment according to claim 95 where R₂ is -H.

20

103. A method of treatment according to claim 95 where R₃ is -H.

104. A method of treatment according to claim 95 where R_N is

25 R_{N-1}-X_N-, where X_N is -CO-, where R_{N-1} is R_{N-aryl} where R_{N-aryl} is phenyl substituted with one -CO-NR_{N-2}R_{N-3} where the substitution on phenyl is 1,3-.

105. A method of treatment according to claim 104 where R_{N-2} and R_{N-3} are the same and are C₃ alkyl.

30 106. A method of treatment according to claim 95 where R_N is

R_{N-1}-X_N- where X_N is -CO-, and where R_{N-1} is R_{N-aryl} where R_{N-aryl} is phenyl substituted with one C₁ alkyl and with one -CO-NR_{N-2}R_{N-3} where the substitution on the phenyl is 1,3,5-.

107. A method of treatment according to claim 106 where R_{N-2} and R_{N-3} are the same and are C_3 alkyl.

108. A method of treatment according to claim 95 where R_N is
5 $R_{N-1}-X_N$, where X_N is $-CO-$, and where R_{N-1} is $R_{N-heteroaryl}$ where $R_{N-heteroaryl}$ is substituted with one $-CO-NR_{N-2}R_{N-3}$.

109. A method of treatment according to claim 108 where R_{N-2} and R_{N-3} are the same and are $-C_3$ alkyl.

10

110. A method of treatment according to claim 95 where R_A and R_B are each independently:

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-aryl}$ where R_{A-aryl} is phenyl,

$-(CR_{A-x}R_{A-y})_{0-4}-R_{A-heteroaryl}$,

15

-cyclopentyl or -cyclohexyl ring fused to a R_{A-aryl} or $R_{A-heteroaryl}$ or $R_{A-heterocycle}$.

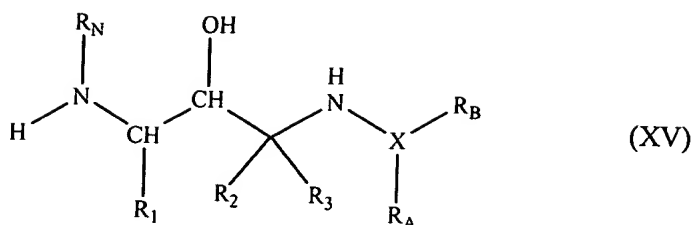
111. The method of claim 95, wherein said beta-secretase is exposed to said compound *in vitro*.

20 112. The method of claim 95, wherein said beta-secretase is exposed to said compound in a cell.

113. The method of claim 95, wherein said cell is in an animal.

25 114. The method of claim 113, wherein said animal is a human.

115. A method for inhibiting cleavage of amyloid precursor protein (APP), in a reaction mixture, at a site between Met596 and Asp597, numbered for the APP-695 amino acid isotype; or at a corresponding site of an isotype or mutant thereof, comprising exposing
30 said reaction mixture to an effective inhibitory amount of a compound of formula XV



where R_1 , R_2 , R_3 , R_N , R_A , R_B , and X are as defined in claim 1.

116. The method of claim 115, wherein said cleavage site is between Met652 and Asp653, numbered for the APP-751 isotype; between Met 671 and Asp 672, numbered for the APP-770 isotype; between Leu596 and Asp597 of the APP-695 Swedish Mutation; between Leu652 and Asp653 of the APP-751 Swedish Mutation; or between Leu671 and Asp672 of the APP-770 Swedish Mutation.

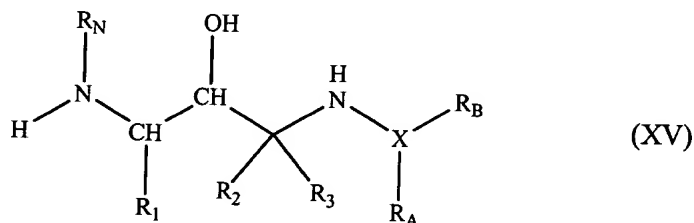
117. The method of claim 115, wherein said reaction mixture is exposed *in vitro*.

118. The method of claim 115, wherein said reaction mixture is exposed in a cell.

119. The method of claim 118, wherein said cell is an animal cell.

120. The method of claim 119, wherein said cell is a human cell.

121. A method for inhibiting production of amyloid beta peptide (A beta) in a cell, comprising administering to said cell an effective inhibitory amount of a compound of the formula XV

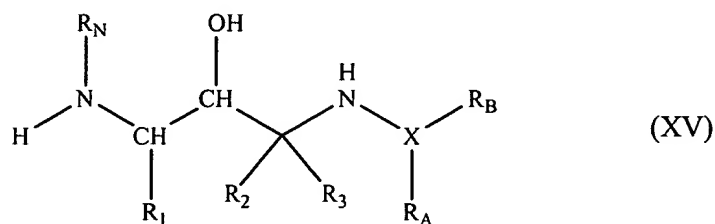


where R_1 , R_2 , R_3 , R_N , R_A , R_B , and X are as defined in claim 1.

122. The method of claim 121, wherein said administering is to an animal.

123. The method of claim 122, wherein said administering is to a human.

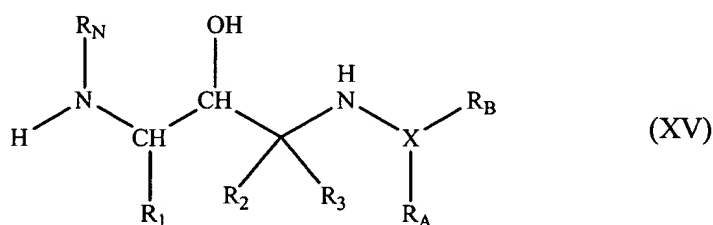
124. A method for inhibiting the production of beta-amyloid plaque in an animal, comprising administering to said animal an effective inhibitory amount of a compound of the formula XV



5 where R_1 , R_2 , R_3 , R_N , R_A , R_B , and X are as defined in claim 1.

125. The method of claim 124, wherein said animal is a human.

126. A method for treating or preventing a disease characterized by beta-amyloid deposits in the brain comprising administering to a patient an effective therapeutic amount of a hydroxyethylene compound of the formula XV



where R_1 , R_2 , R_3 , R_N , R_A , R_B , and X are as defined in claim 1.

127. The method of claim 126, wherein said therapeutic amount is in the range of from about 0.1 to about 1000 mg/day.

128. The method of claim 126, wherein said therapeutic amount is in the range of from about 15 to about 1500 mg/day.

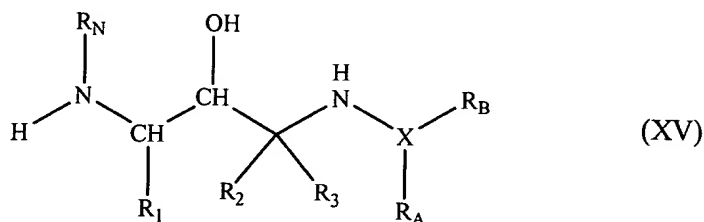
129. The method of claim 128, wherein said therapeutic amount is in the range of from about 1 to about 100 mg/day.

130. The method of claim 129, wherein said therapeutic amount is in the range of from about 5 to about 50 mg/day.

131. The method of claim 126, wherein said disease is Alzheimer's disease.

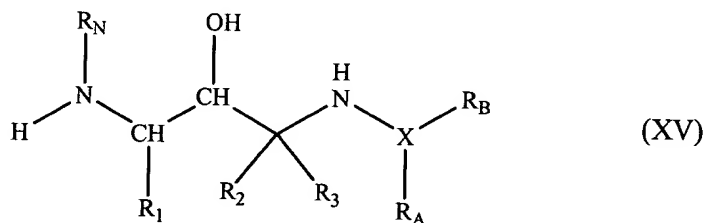
132. The method of claim 126, wherein said disease is Mild Cognitive Impairment, Down's Syndrome, or Hereditary Cerebral Hemorrhage with Amyloidosis of the Dutch Type.

133. A composition comprising beta-secretase complexed with a compound of the formula XV



where R_1 , R_2 , R_3 , R_N , R_A , R_B , and X are as defined in claim 1.

134. A method for producing a beta-secretase complex comprising: exposing beta-secretase to a compound of the formula XV

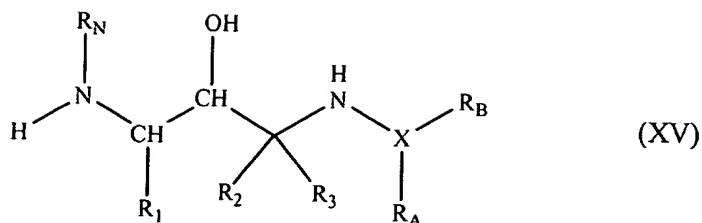


where R_1 , R_2 , R_3 , R_N , R_A , R_B , and X are as defined in claim 1, or a pharmaceutically acceptable salt thereof in a reaction mixture under conditions suitable for the production of said complex.

135. The method of claim 134, where said exposing is *in vitro*.

136. The method of claim 133, wherein said reaction mixture is a cell.

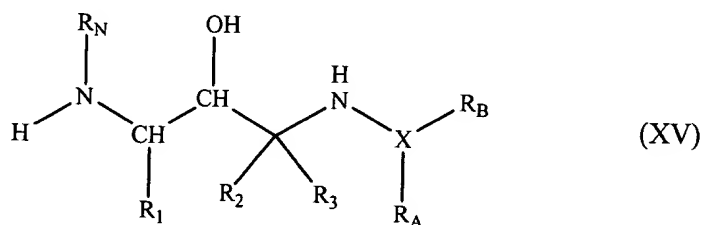
137. A kit comprising component parts capable of being assembled, wherein at least one component part comprises a compound of formula XV



where R_1 , R_2 , R_3 , R_N , R_A , R_B , and X are as defined in claim 1, enclosed in a container.

138. The kit of claim 137, wherein said compound is lyophilized and at least one further
5 component part comprises a diluent.

139. A kit comprising a plurality of containers, each container comprising one or more
unit dose of a compound of formula XV



10 where R_1 , R_2 , R_3 , R_N , R_A , R_B , and X are as defined in claim 1.

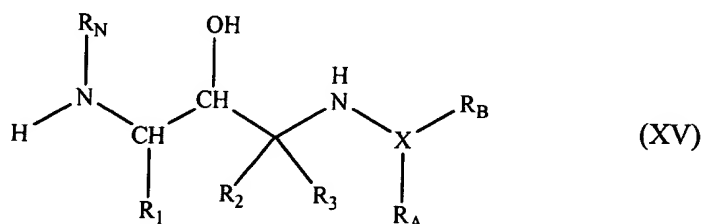
140. The kit of claim 139, wherein each container is adapted for oral delivery and
comprises a tablet, gel, or capsule.

15 141. The kit of claim 140, wherein each container is adapted for parenteral delivery and
comprises a depot product, syringe, ampoule, or vial.

142. The kit of claim 141, wherein each container is adapted for topical delivery and
comprises a patch, medipad, ointment, or cream.

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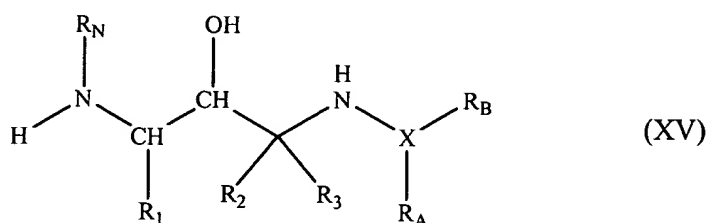
143. A kit comprising a compound of formula XV



where R_1 , R_2 , R_3 , R_N , R_A , R_B , and X are as defined in claim 1;

and one or more therapeutic agent selected from the group consisting of an antioxidant, an anti-inflammatory, a gamma secretase inhibitor, a neurotrophic agent, an acetylcholinesterase inhibitor, a statin, an A beta peptide, and an anti-A beta antibody.

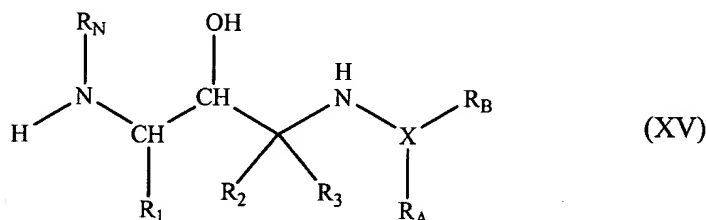
- 5 144. A composition comprising
a compound of formula XV



where R_1 , R_2 , R_3 , R_N , R_A , R_B , and X are as defined in claim 1;
and an inert diluent or edible carrier.

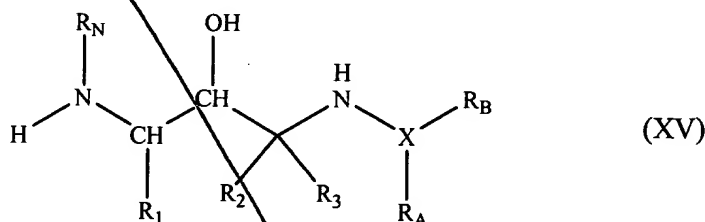
- 10 145. The composition of claim 144, wherein said carrier is an oil.

146. A composition comprising
a compound of formula XV



15 where R_1 , R_2 , R_3 , R_N , R_A , R_B , and X are as defined in claim 1; and
and a binder, excipient, disintegrating agent, lubricant, or gildant.

- 20 147. A composition comprising
a compound of formula XV



where R_1 , R_2 , R_3 , R_N , R_A , R_B , and X are as defined in claim 1, disposed in a cream, ointment, or patch.